

HANDBOOK

FOR STEEL WINDOWS AND STEEL DOORS


SIXTH EDITION
OF DRAFTING ROOM
STANDARDS

1929

Issued by
TRUSCON STEEL COMPANY - YOUNGSTOWN, OHIO
MANUFACTURERS AND ENGINEERS

GURNEY DLDg Sprague





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HANDBOOK

FOR STEEL WINDOWS AND STEEL DOORS

DRAFTING ROOM STANDARDS FOR

Pivoted Steel Windows
Continuous Steel Windows
Donovan Awning-Type
Windows

Double-Hung Steel Windows
Architectural Projected Steel
Windows
Utility Steel Windows

Commercial Projected Steel
Windows

Standard Steel Casements
Basement Steel Windows

Pressed Steel Frames
Mechanical Operators
Steel Doors
Pressed Steel Lintels

SIXTH EDITION

REVISED, APRIL, 1929

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

THE TRUSCON LABORATORIES, DETROIT, MICHIGAN

TRUSSED CONCRETE STEEL COMPANY, OF CANADA, LIMITED
WALKERVILLE, ONT.

Factories in Youngstown, Cleveland, Detroit, Los Angeles, Walkerville, Ont., and Japan



Table of Contents

	Plate No.	Page No. Speci- fications	Plate
INTRODUCTORY.....		5	
THE TRUSCON LINE.....		4	
TRUSCON PIVOTED STEEL WINDOWS:			
Standard Types and Sizes.....	A -1	6	7
Typical Installation Details—Brick, Concrete, Steel.....	A -2	6	8
Typical Installation Details—Hollow Tile, Frame, Stucco.....	A -3	6	9
Vertical Mullions and Jamb Plates.....	A -4	6	10
Vertical Mullions.....	A-11	6	13
Horizontal Mullions.....	A -5	6	11
Method of Pivoting Ventilators.....	A -6	6	14
Detail of Standard Industrial Hardware.....	A -7	6	15
Dimensions and Combinations.....	A -8	6	12
Horizontally Rolling.....	A -9	16	17
Vertically Pivoted.....	A-10	18	19
Side Hinged Vents—Standard.....	A-12	6	20
Side Hinged Vents—Special.....	A-13	6	21
Method of Attaching Window Cleaning Devices.....	M -1		118
Standard Window Sections.....	R -1		128
TRUSCON PROJECTED WINDOWS:			
Standard Commercial Types and Sizes.....	B -1	22	23
Commercial Type—Ventilators Open Out.....	B -2	22	24
Commercial Type—Top Vents Open Out—Bottom Vents Open In.....	B -3	22	25
Utility Steel Windows.....	B -4	26	27
Standard Architectural Types and Sizes.....	B-21	28	29
Architectural Type—Ventilators Open Out.....	B-22	28	30
Architectural Type—Upper Vents Open Out—Lower Vents Open In.....	B-23	28	31
Architectural Type—Outside Glazed.....	B-42	28	32
Details of Standard Ornamental Hardware.....	B-30	28	33
TRUSCON DOUBLE-HUNG STEEL WINDOWS MODEL NO 28:			
Standard Types and Sizes.....	W-1	113	114
Standard Details.....	W-2	113	115
Standard Details.....	W-3	113	116
Standard Details.....	W-4	113	117
Special Features.....	W-5	113	118
Screen Details.....	W-6	113	119
Special Features.....	W-7	113	120
Counterbalanced Plate Type.....	W-8	113	121
Hospital Type.....	W-9	113	122
TRUSCON DONOVAN AWNING-TYPE WINDOWS:			
Standard Sizes and Details.....	P -1	105	106
Screens and Shades.....	P -2	105	107
Mechanically Operated.....	P -3	105	108
MODEL NO. 29			
Standard Sizes and Details.....	P -4	109	110
Ventilators to open out.....	P -5	109	111
Screen Details.....	P -6	109	112
TRUSCON STANDARD STEEL CASEMENTS:			
Standard Types and Sizes.....	C-21	34	35
Mullion Detail.....	C-22	34	36
Mullion Detail.....	C-22A	34	37
Brick Veneer Detail.....	C-23	34	38
Solid Brick Detail.....	C-24	34	39
Hollow Tile Detail.....	C-25	34	40
Frame and Stucco Details.....	C-26	34	41
Stone Construction Detail.....	C-27	34	42
Hardware Details.....	C-28	34	43
Screen Details.....	C-29	34	44
Screen Details.....	C-30	34	45
Double Casement Without Mullion.....	C-31	46	47
Standard Casement Door.....	C-32	50	49
Standard Casement Door.....	C-33	50	51
Casement Sections.....	R -2		129

	Plate No.	Speci- fications	Page No. Plate
TRUSCON COPPER STEEL BASEMENT WINDOWS: -----			
Basement Sections-----	D -1	52	53
	R -2		129
TRUSCON CONTINUOUS STEEL WINDOWS:			
For Openings with Structural Steel Frames-----	E -1	54	55
Horizontal Sections with Storm Panels-----	E -2	54	56
Horizontal Section without Storm Panels-----	E -2-A	54	57
Top Hung and Fixed Runs on Slope-----	E -3	54	58
Combination of Top and Bottom Hung-----	E -4	54	59
Installation Details—Horizontally Pivoted Type-----	E -5	54	60
Head, Sill and Vertical Mullion-----	E -6	54	61
Continuous Window Sections-----	R -3		130
TRUSCON STEEL FRAMES:			
For Power Houses and Monumental Structures-----	G -1	77	78
For Power Houses and Monumental Structures-----	G -2	77	79
For Power Houses and Monumental Structures-----	G -3	77	80
TRUSCON MECHANICAL OPERATORS:			
Tension Operator, Toggle Lever Arm Type-----	F -1	62	63
Tension Operator, Hand and Motor Driven—Single Type-----	F -3	62	64
Tension Operator, Electrically Driven Heavy and Light Duty Duplex Type-----	F -4	62	65
Tension Operator, Heavy Vertical Type—Top Hung Continuous Windows-----	F -5	62	66
Torsion Operator, Typical Installation Details-----	F -7	67	68
Torsion Operator, Installation Details—Motor Operated-----	F -8	67	69
Torsion Operator, Group Control—Hand Operated-----	F -9	67	70
Torsion Operator, Heavy Duty Hand Operated Power-----	F-10	67	71
Torsion Operator, Vertical Hand Wheel and Miter Gear Control-----	F-13	67	72
Rack and Pinion Operator for Long Runs of Standard Windows-----	F-14	73	74
Torsion Operator, Prison Type-----	F-11		75
Schedule of Mechanical Operators-----			76
UNDERWRITERS' LABELED WINDOWS:			
Pivoted Ventilator Types-----	L -1	124	125
Projected Ventilator Types-----	L -2	126	127
Double-Hung Windows-----		123	
TRUSCON STEEL DOORS:			
Stock Sizes—Swing Types-----	J -1	81	82
Stock Sizes—Slide Types-----	J -2	81	83
Details of Standard Hardware—Swing Doors-----	J -5	80	84
Details of Standard Hardware—Slide Doors-----	J -6	82	85
Industrial Doors—Swing Type-----	J -3	86	87
Industrial Doors—Railroad Types-----	J -4	86	88
Industrial Doors—Slide Types-----	J-14	86	89
Fire Department Steel Doors-----	J -9	90	91
Vertical Lift Steel Doors-----	J-10	92	93
Vertical Lift-Swing Steel Doors-----	J-13	94	95
Bifold Steel Doors-----	J-17	96	97
Airplane Hangar Doors (Straight Slide Type)-----	J-11	98	99
Airplane Hangar Doors (Curved Track Type)-----	J -7	100	101
Airplane Hangar Doors (Curved Track Type)-----	J -8	100	102
Airplane Hangar Doors (Curved Track Type) (Power Operated)-----	J-15	100	103
Airplane Hangar Doors (Curved Track Type) (Power Operated)-----	J-16	100	104
TRUSCON PRESSED STEEL LINTELS:			
Typical Installation Details-----	N -1	132	133
TRUSCON STEEL PAINT AND PUTTY:			
Paint and Putty Specifications-----	S -1	134	
TRUSCON METAL WINDOW PUTTY AND PAINT:			
Manufactured and Recommended by The Truscon Laboratories, Detroit, Mich.-----			135
TRUSCON ERECTION SERVICE -----		131	

TRUSCON AND ITS PRODUCTS

TRUSCON is an institution of national scope, the largest company of its kind in the world, manufacturing a complete line of steel products for permanent construction.

Truscon combines careful production methods with accuracy, quality and sound engineering to insure the utmost value and efficiency.

Truscon offers the convenience of large supplies of commodity products in nearby Warehouses or prompt delivery from stock.

STEEL WINDOWS for Commercial, Industrial, Residential, Institutional and Public Buildings.

STEEL DOORS AND FRAMES for large and small outside openings, a style for every industrial purpose.

MECHANICAL OPERATORS for steel windows, hand and power operated.

REINFORCING STEEL in keeping with individual designs and conforming to standard practice.

STEEL JOIST, for an economical fireproof floor construction including Plate Girder, Open Truss and Nailer Joists.

WELDED STEEL FABRIC for Roads, Pavements, Pipes and Floors. Curb Bars and Edge Protectors.

METAL LATH for plaster bases. Hyrib, Cornerbeads, Metal Trim and Accessories.

STEELDECK ROOFS, I-Plates, Ferrodeck and Ferroboard Roofs, lightweight, permanent, insulated to any degree and waterproofed.

STRUCTURAL STEEL for every kind of building design incorporating the most modern methods.

TRANSMISSION STRUCTURES, Steel Poles, and H-Frames, Trolley Poles, Towers.

STEEL BUILDINGS from Standardized Parts for one-story Shops, Warehouses, Garages and similar requirements.

PRESSED STEEL Parts for volume production. Automobile and truck frames, axle housings, brake drums. Boxes and Platforms for Material Handling, and Foundry Flasks.

INDUSTRIAL MAINTENANCE PRODUCTS, Waterproofings, Floor Hardeners, Paints and Cement Roofing Tile.

INTRODUCING THE HAND BOOK

IN THE interest of better daylighting and ventilation, Truscon offers this Hand Book for Steel Windows and Steel Doors to architects, engineers, draftsmen and contractors. The various types of steel windows and steel doors shown are designed in accord with nationally adopted standard practices.

Window details are laid out to scale and can be instantly adapted to the designer's needs. Construction details have been prepared to meet the practical conditions in the field.

Complete notes enable the inexperienced designer to select suitable windows for any opening. Emphasis has been placed on standardized types and sizes, as promoting greatest economy and meeting general requirements.

Specifications are based on an extended experience in the manufacture, design and installation of steel windows as well as in the building practice generally.

Users of this Hand Book will find the information helpful in the design of windows and preparation of details, as well as an important factor in the saving of valuable time, greater accuracy and layout efficiency.

Truscon maintains an engineering service organization in all principal cities all over the country. The prime function of this organization is intelligent cooperation with the architectural profession to supplement their own engineering staff.

TRUSCON STEEL WINDOWS WITH HORIZONTALLY PIVOTED VENTILATORS

SPECIFICATIONS

General

- 1 All windows so indicated on the plans and elevations and called for in these specifications shall be the Horizontally Pivoted type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitutions shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification, hot-rolled billet steel.
- 3 All joints shall be mortise and tenon, and air hammer riveted.
- 4 The intersection of horizontal and vertical muntins shall have a dovetail mitre rigidly interlocking the bars.
- 5 No excess metal or projecting surfaces will be permitted where muntin bars intersect.
- 6 Muntin bars except where ventilators occur are to be continuous from head to sill and from jamb to jamb.
- 7 The members of the windows shall not be bent or deformed during process of manufacture.
- 8 Double contact weathering shall be provided on all four sides of the ventilator.
- 9 Unless otherwise specified, the ventilators shall be Horizontally Pivoted 2" above the center line.
- 10 The pivots shall be solid steel securely riveted to the ventilator and side bar of window, and equipped with $\frac{3}{8}$ " steel removable pins held in place with washers and cotter pins.
- 11 Top and bottom rails of ventilators shall be cambered in shop before being fitted to windows, so, when closed, the corners shall engage first, allowing the ventilator to be evenly drawn up to the weather-tight bearing by means of standard locking device.

Mullions

- 12 Where two or more window units, less than 6'-3" in height, are used in the same opening, they shall be connected with Truscon Standard Plate Mullions (Type T-1).
- 13 For window units over 6'-3" high, and up to and including 10'-9 $\frac{1}{2}$ " high, Truscon Standard T-Bar Mullions (Type T-2) shall be used.
- 14 For all window openings over 10'-9 $\frac{1}{2}$ " high, Truscon Standard double T-Bar Mullions (Type T-3) shall be used.

- 15 All mullions shall be 2 $\frac{3}{4}$ " wide (2" mullion distance) with slotted holes to allow for adjustment.

- 16 Mullions shall extend 1 $\frac{3}{8}$ " below the leg of window at sill to provide a firm anchorage in sill construction.

Hardware

- 17 All ventilators shall be equipped with either push bar, cam latch or spring latch and chain, as marked on drawings or as hereinafter specifically called for; all iron and steel hardware to be sherardized before shipment. (Schedule of proper hardware for windows to be inserted here.)

Mechanical Operator

- 18 All runs of ventilators, shown on drawings as "mechanically controlled", shall be equipped with torsion or other approved type of operator, as manufactured by the Truscon Steel Company, and of design as shown in details.

(Insert specifications for proper type of mechanical Operator.)

- 19 All structural work for the support of steel windows shall be provided by another contractor.

Painting

- 20 All window units shall be given a dip coat of protective paint before shipment.

(For paint specifications see plate S-1 page 134.)

Glazing

- 21 All standard windows shall be glazed on the inside.
- 22 Glass shall be held in place by Truscon, copper-clad, steel wire glazing clips.
- 23 Glass shall be bed and face puttied with red Truscon metal window putty.

(For putty specifications see plate S-1 page 134.)

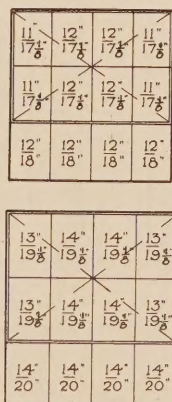
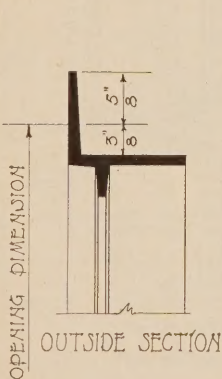
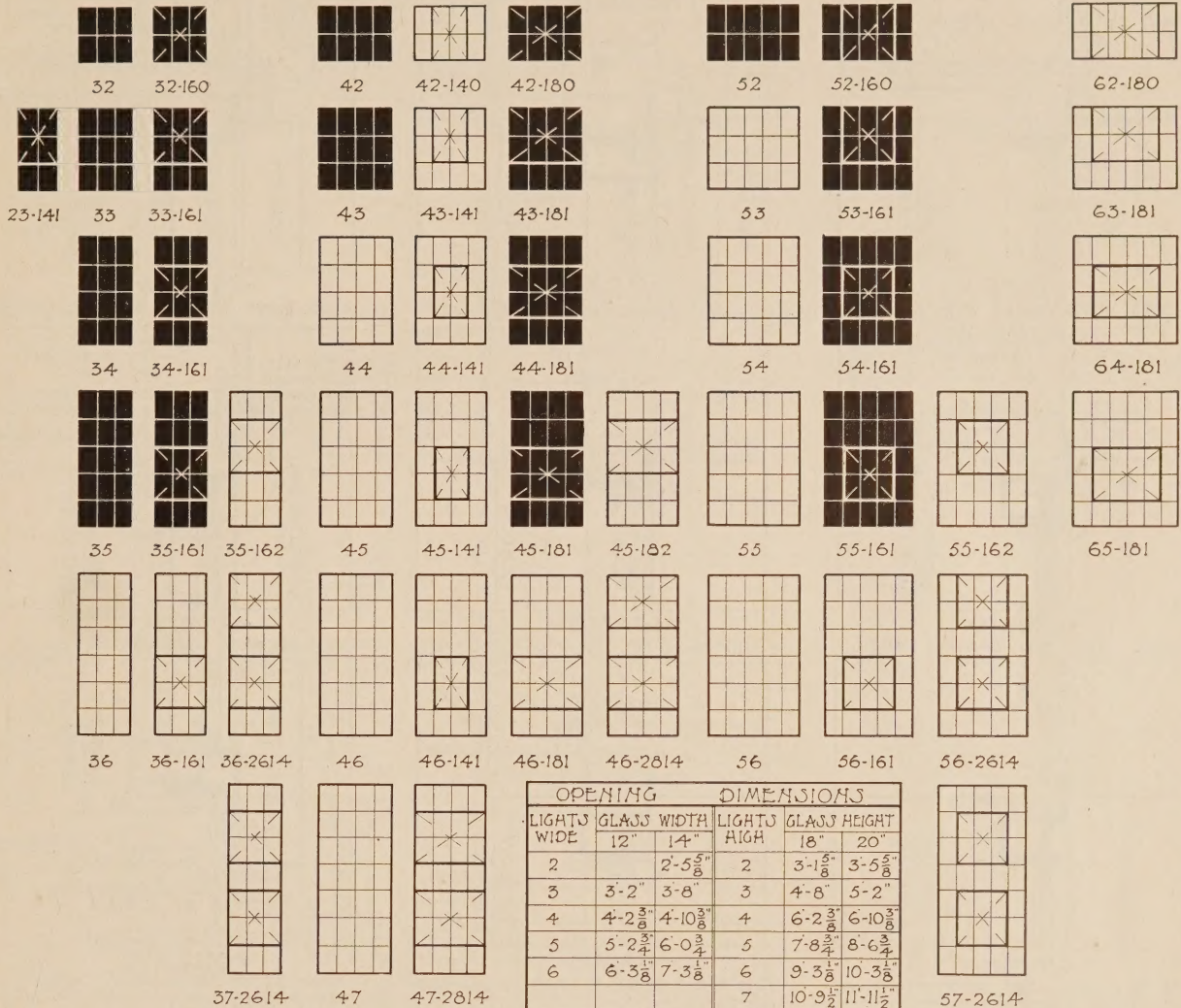
Erection

- 24 Window units must be trued in all directions and set plumb in the masonry.
- 25 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.
- 26 The erection of windows shall be handled by the manufacturer of same.
- 27 After windows have been set in opening and properly built in, the joint between the window frame and masonry shall be carefully pointed up by the mason contractor.

These Specifications cover the following Drafting Room Standards:

A-1 (page 7)	A- 6 (page 14)
A-2 (page 8)	A- 7 (page 15)
A-3 (page 9)	A- 8 (page 12)
A-4 (page 10)	A-11 (page 13)
A-5 (page 11)	A-12 (page 20)
A-13 (page 21)	

14" x 20" AND 12" x 18" GLASS SIZE



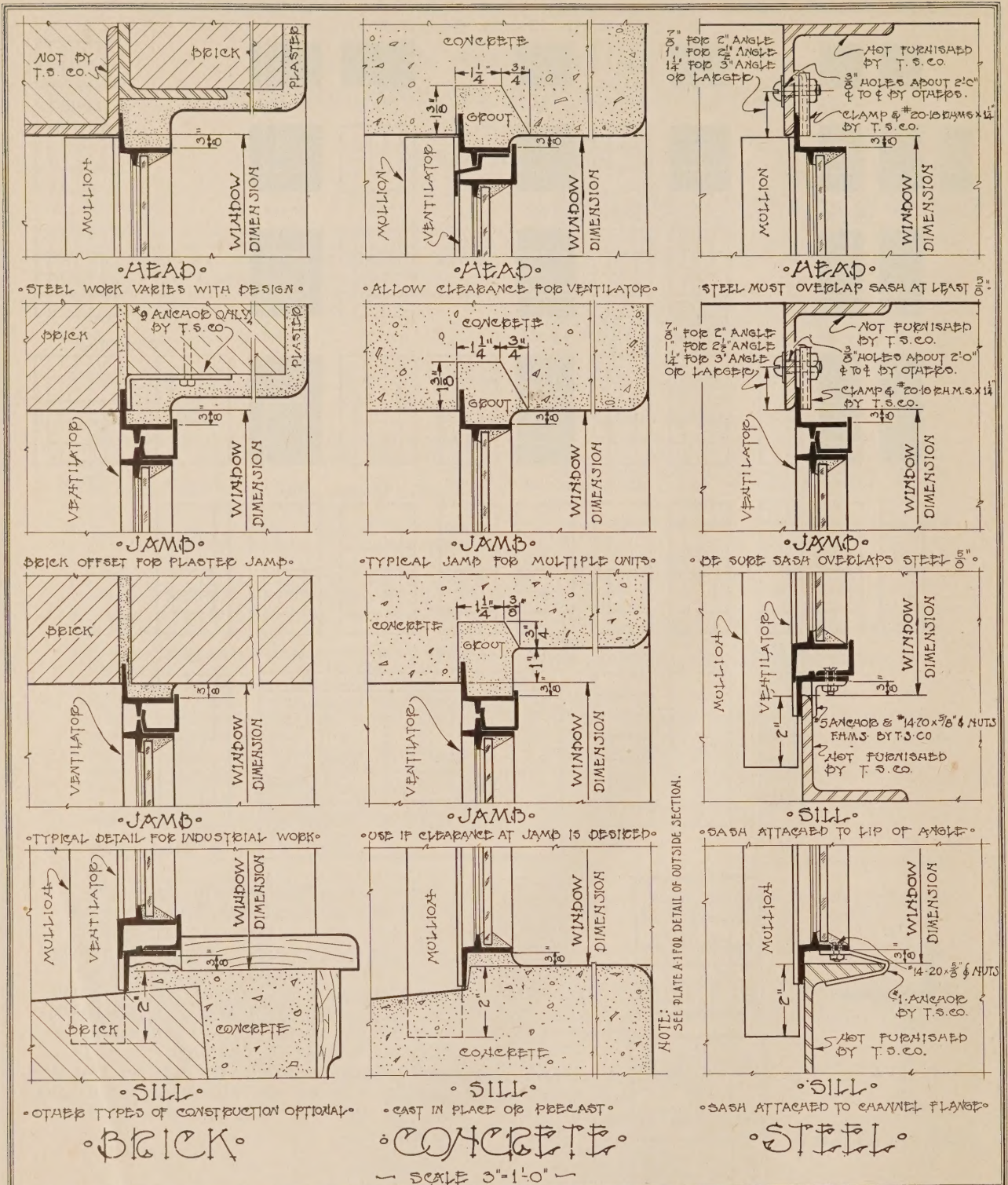
NOTE—STOCK UNITS INDICATED BY WHITE LINES ON SOLID BACKGROUND ARE DELIVERED IMMEDIATELY FROM OUR WAREHOUSES AND BY DEALERS... VENTILATORS INDICATED BY CROSSED DASHED LINES ARE HORIZONTALLY PIVOTED 2 INCHES ABOVE CENTERS... FULL SIZES OF GLASS OCCUR IN STATIONARY PORTION OF WINDOW ONLY. IN VENTILATORS THESE DIMENSIONS ARE REDUCED 1/8 INCH ALONG TOPS AND BOTTOMS AND 1 INCH ALONG SIDES... TRUSCON STEEL WINDOWS MAY BE COMBINED TO FILL OPENINGS OF ANY WIDTH BY MEANS OF TRUSCON STANDARD MULLIONS... ALL TYPES SHOWN ARE PUNCHED FOR MULLIONS TO OBTAIN WIDTH OF OPENING ADD 2 INCHES FOR EACH MULLION REQUIRED.

TRUSCON
STEEL WINDOWS

STOCK AND STANDARDS
TRUSCON HORIZONTALLY PIVOTED WINDOWS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

A-1
JULY-1928

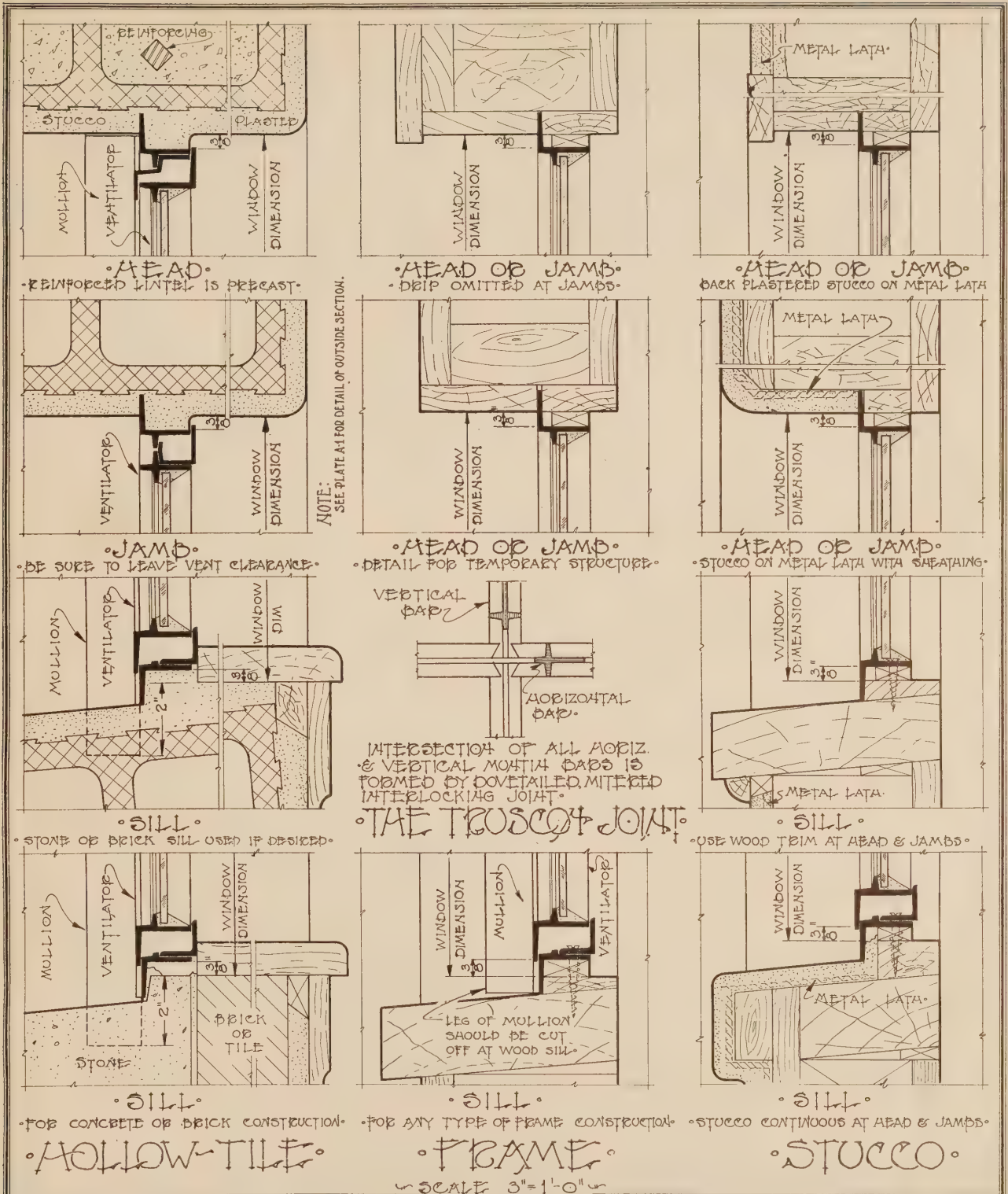


TRUSCON
STEEL WINDOWS

— TYPICAL INSTALLATION DETAILS —
TRUSCON STEEL WINDOWS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO.

A-2
APRIL 1929

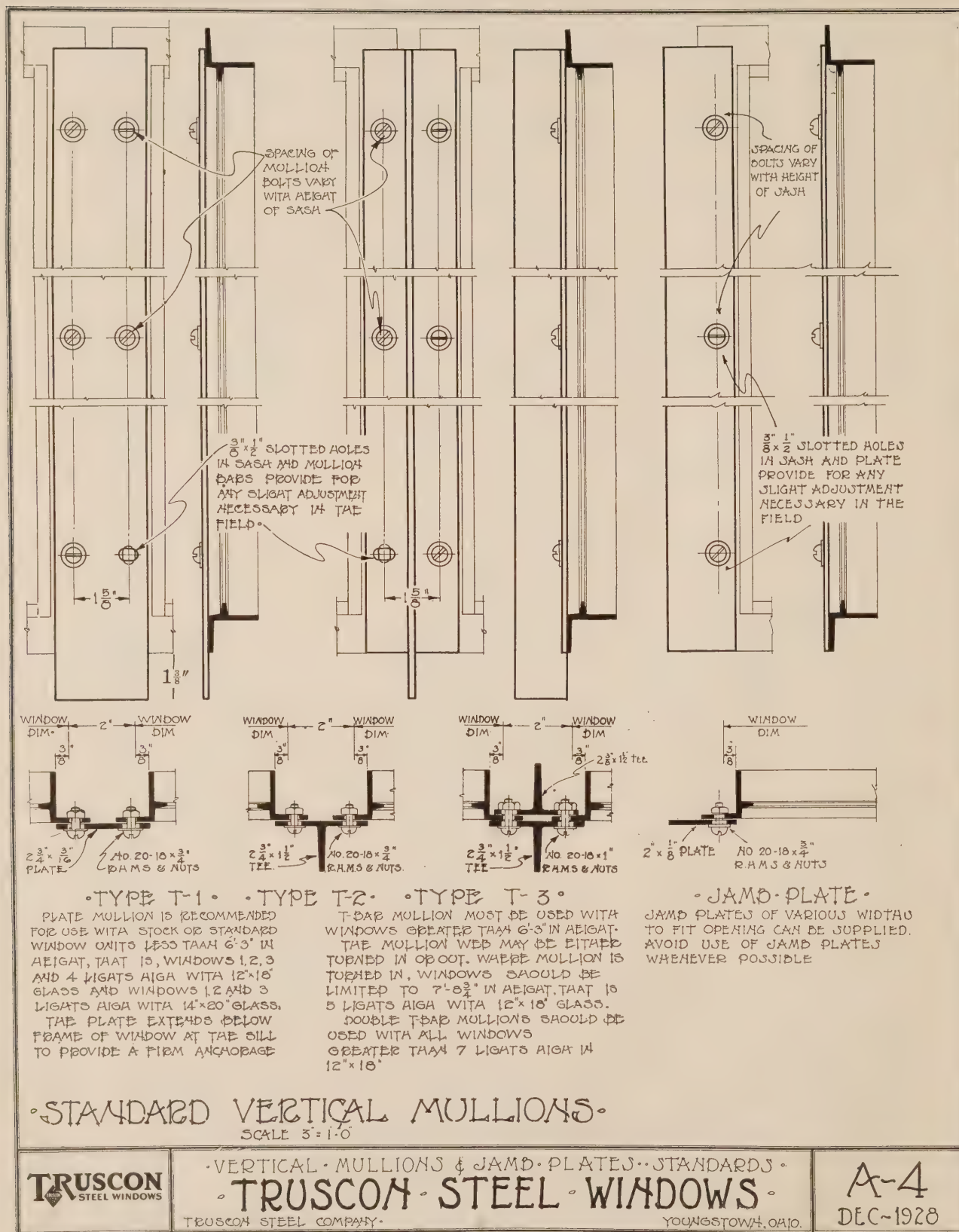


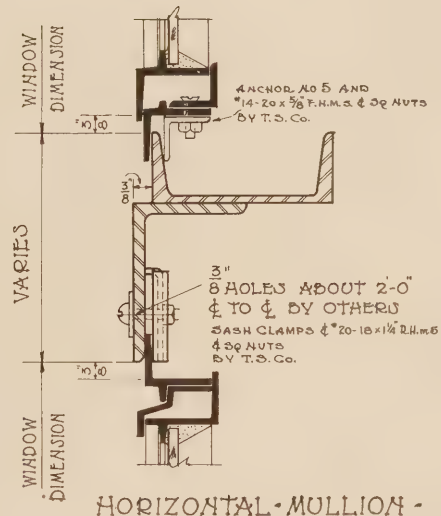
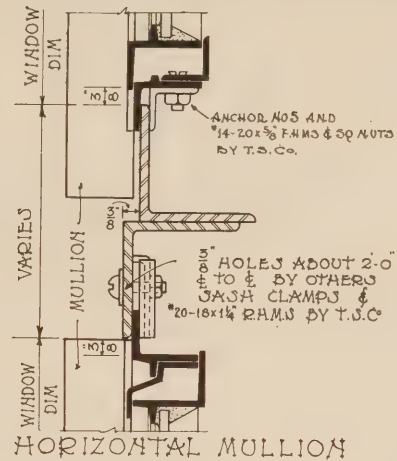
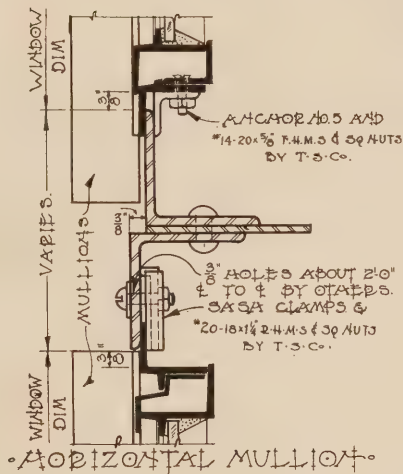
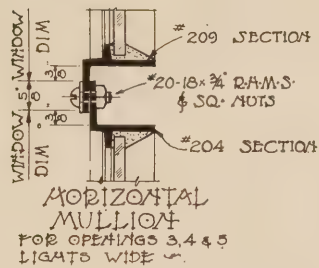
TRUSCON
STEEL WINDOWS

TYPICAL INSTALLATION DETAILS
TRUSCON STEEL WINDOWS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

A-3
APRIL-1929



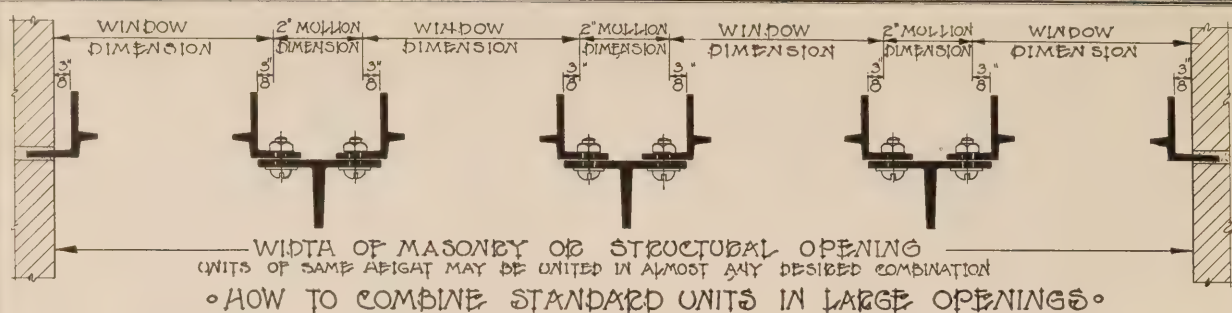


HORIZONTAL MULLIONS—STANDARDS					
12" GLASS			14" GLASS		
NUMBER LIGHTS WIDE	DESIGN	VERTICAL DISTANCE BETWEEN WINDOW DIMENSIONS	NUMBER LIGHTS WIDE	DESIGN	VERTICAL DISTANCE BETWEEN WINDOW DIMENSIONS
3	2-2 1/2 x 2 1/2 x 3/8 L	5"	3	2-2 1/2 x 2 1/2 x 3/8 L	5"
4	OR		4	1-2 x 1 1/2 x 3/8 L WITH	
5	1-2 x 1 1/2 x 3/8 L WITH	OR	5	1-1 x 1 x 3/8 L	OR
6	USE OF LATTER		6	USE OF LATTER	
7	DESIGN LIMITED TO	2"	7	DESIGN LIMITED TO	
8	SINGLE UNIT		8	SINGLE UNIT	
9	OPENINGS ONLY		9	OPENINGS ONLY	2"
10	2-2 1/2 x 2 1/2 x 3/8 ANGLES	5 1/4"	10	2-2 1/2 x 2 1/2 x 3/8 ANGLES	5 1/4"
11	1-6 x 1/4 PLATE OR	5 1/4"	11	1-6 x 1/4 PLATE OR	5 1/4"
12	1-4" CHANNEL &	5 1/4"	12	1-4" CHANNEL &	5 1/4"
13	1-3 1/2 x 2 1/2 x 1/4 ANGLE	5 1/4"	13	1-3 1/2 x 2 1/2 x 1/4 ANGLE	5 1/4"
14			14	2-3 x 5 x 5/16 ANGLES	6 3/8"
15	2-3 x 5 x 5/16 ANGLES	6 3/8"	15	1-6 x 1/4 PLATE OR	6 3/8"
16	1-6 x 1/4 PLATE OR	6 3/8"	16	1-4" CHANNEL &	6 3/8"
17	1-6" CHANNEL &	6 3/8"		1-4 x 3 x 5/16 ANGLE	6 3/8"
18	1-4 x 3 x 5/16 ANGLE	6 3/8"			

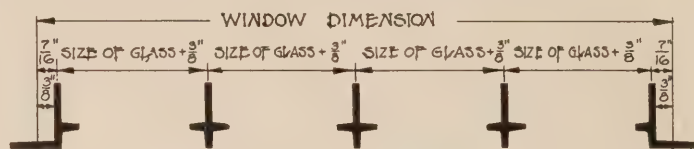
TRUSCON
STEEL WINDOWS

HORIZONTAL MULLIONS—STANDARDS
TRUSCON STEEL WINDOWS
TRUSCON STEEL COMPANY
YOUNGSTOWN OHIO

A-5
APRIL - 1929



DIMENSION TABLE SINGLE AND MULTIPLE UNITS			
GLASS SIZES		NO. OF LIGHTS HIGH	ALWAYS COMBINE HEIGHTS WITH WIDTHS IN THE SAME VERTICAL COLUMN - WIDTH DIMENSIONS INCLUDE 2" FOR EACH MULLION REQUIRED -
12"x18"	14"x20"		
HEIGHT	HEIGHT		
1'-7 $\frac{1}{4}$ "	1'-9 $\frac{1}{4}$ "	1	
3'-1 $\frac{3}{8}$ "	3'-5 $\frac{3}{8}$ "	2	
4'-8"	5'-2"	3	
6'-2 $\frac{3}{8}$ "	6'-10 $\frac{3}{8}$ "	4	
7'-8 $\frac{3}{4}$ "	8'-6 $\frac{3}{4}$ "	5	
9'-3 $\frac{1}{8}$ "	10'-3 $\frac{1}{8}$ "	6	
10'-9 $\frac{1}{2}$ "	11'-11 $\frac{1}{2}$ "	7	
ANY WIDTH MAY BE ADDED IN ANY OF ABOVE HEIGHTS		NO. OF LIGHTS WIDE	NO. OF WINDOW UNITS
WIDTH	WIDTH		
—	2'-5 $\frac{5}{8}$ "	2	1
3'-2"	3'-8"	3	1
4'-2 $\frac{3}{8}$ "	4'-10 $\frac{3}{8}$ "	4	1
5'-2 $\frac{3}{4}$ "	6'-0 $\frac{3}{4}$ "	5	1
6'-3 $\frac{1}{8}$ "	7'-3 $\frac{1}{8}$ "	6	1
6'-6"	7'-6"	6	2
8'-6 $\frac{3}{4}$ "	9'-10 $\frac{3}{4}$ "	8	2
9'-10"	11'-4"	9	3
10'-7 $\frac{1}{2}$ "	12'-3 $\frac{1}{2}$ "	10	2
10'-10 $\frac{3}{8}$ "	12'-6 $\frac{3}{8}$ "	10	3
11'-10 $\frac{3}{4}$ "	13'-8 $\frac{3}{4}$ "	11	3
12'-8 $\frac{1}{4}$ "	14'-8 $\frac{1}{4}$ "	12	2
12'-11 $\frac{1}{8}$ "	14'-11 $\frac{1}{8}$ "	12	3
13'-11 $\frac{1}{2}$ "	16'-1 $\frac{1}{2}$ "	13	3
14'-11 $\frac{1}{8}$ "	17'-3 $\frac{1}{8}$ "	14	3
15'-2 $\frac{3}{4}$ "	17'-6 $\frac{3}{4}$ "	14	4
16'-0 $\frac{1}{4}$ "	18'-6 $\frac{1}{4}$ "	15	3
17'-0 $\frac{5}{8}$ "	19'-8 $\frac{5}{8}$ "	16	3
17'-3 $\frac{1}{2}$ "	19'-11 $\frac{1}{2}$ "	16	4
18'-1"	20'-11"	17	3
18'-6 $\frac{3}{4}$ "	21'-4 $\frac{3}{4}$ "	17	5
19'-1 $\frac{3}{8}$ "	22'-1 $\frac{3}{8}$ "	18	3
19'-4 $\frac{1}{4}$ "	22'-4 $\frac{1}{4}$ "	18	4
20'-7 $\frac{1}{2}$ "	23'-9 $\frac{1}{2}$ "	19	5
21'-5"	24'-9"	20	4



• HOW TO COMPUTE WINDOW DIMENSIONS FROM GLASS SIZES •

THE WINDOW DIMENSIONS OF SINGLE OR MULTIPLE WINDOW UNITS ARE EXACTLY THE SAME AS THE PREPARED STRUCTURAL OPENING IN BUILDING.

WITH DESIRED GLASS SIZES KNOWN WINDOW DIMENSIONS MAY BE COMPUTED BY MEANS OF THE

FOLLOWING FORMULA -

SD = WINDOW DIMENSION (HEIGHT OR WIDTH)

N = NUMBER OF LIGHTS (HEIGHT OR WIDTH)

S = SIZE OF LIGHTS (HEIGHT OR WIDTH)

THEN SD = N(S + $\frac{3}{8}$) + $\frac{7}{8}$ "

WHEN UNITS ARE COMBINED IN SAME OPENING ADD 2" TOP EVERY MULLION REQUIRED.

• USE 14"x20" GLASS SIZES WHENEVER POSSIBLE •

12	12	12	12	12
18	18	18	18	18
12	11	12	11	12
18	17 $\frac{1}{8}$	17 $\frac{1}{8}$	17 $\frac{1}{8}$	18
12	11	12	11	12
18	17 $\frac{1}{8}$	17 $\frac{1}{8}$	17 $\frac{1}{8}$	18
12	12	12	12	12
18	18	18	18	18

14	14	14	14	14
20	20	20	20	20
14	13	14	13	14
20	19 $\frac{1}{8}$	19 $\frac{1}{8}$	19 $\frac{1}{8}$	20
14	13	14	13	14
20	19 $\frac{1}{8}$	19 $\frac{1}{8}$	19 $\frac{1}{8}$	20
14	14	14	14	14
20	20	20	20	20

• GLASS SIZES FOR STANDARD WINDOWS •

DESIGNATED GLASS SIZES IN DIMENSION TABLE AND DIAGRAMS, OCCUR ONLY IN THE STATIONARY PORTION OF THE WINDOWS.

GLASS IN THE VENTILATORS ARE SMALLER.

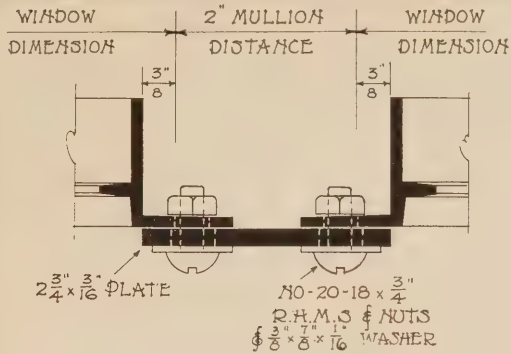
ALL LIGHTS AT TOP AND BOTTOM OF VENTILATORS MUST BE 1" WIDER AND ALL LIGHTS AT SIDES OF VENTILATORS MUST BE 1" NARROWER THAN IN THE STATIONARY PORTION OF WINDOWS.

TRUSCON
STEEL WINDOWS

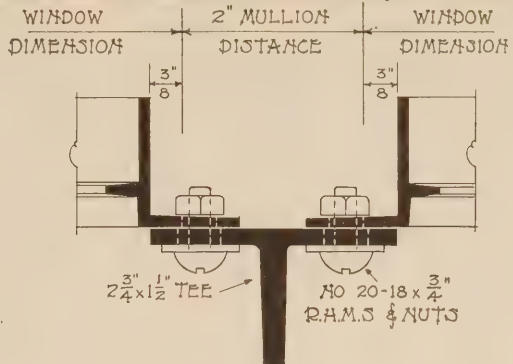
• DIMENSIONS AND COMBINATIONS •
TRUSCON STEEL WINDOWS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO.

A-8
JULY-1928



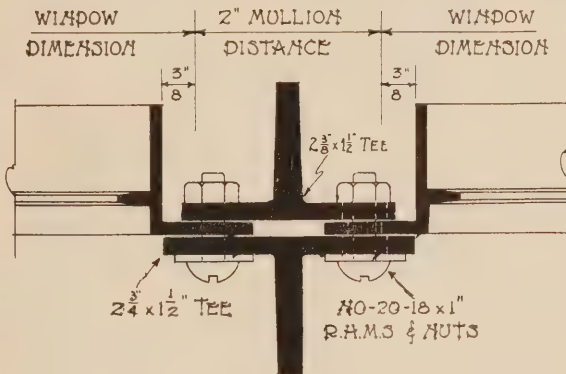
• TYPE • T-1 •



• TYPE • T-2 •

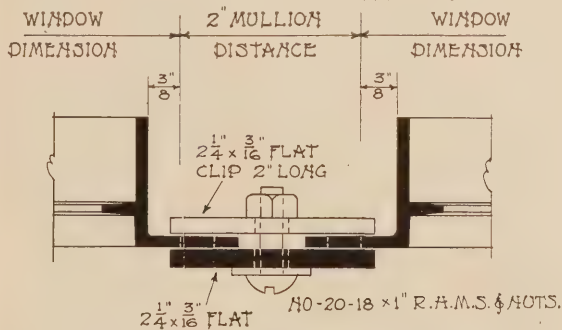
• NOTE •

T-1 MULLION IS RECOMMENDED FOR USE WITH STOCK OR STANDARD WINDOW UNITS LESS THAN 6'-4 3/8" IN HEIGHT THAT IS WINDOWS 1 2 3 AND 4 LIGHTS HIGH WITH 12"x18" GLASS AND WINDOWS 1 2 AND 3 LIGHTS HIGH WITH 14"x20" GLASS THE PLATE EXTENDS BELOW FRAME OF WINDOW AT THE SILL TO PROVIDE A FIRM ANCHORAGE
T-2 MULLION MUST BE USED WITH WINDOWS GREATER THAN 6'-4 3/8" IN HEIGHT THE MULLION WEB MAY BE EITHER TURNED IN OR OUT WHERE MULLION IS TURNED IN WINDOWS SHOULD BE LIMITED TO 7'-8 3/4" IN HEIGHT THAT IS 5 LIGHTS HIGH WITH 12"x18" GLASS
T-3 MULLIONS SHOULD BE USED WITH ALL WINDOWS GREATER THAN 7 LIGHTS HIGH IN 12"x18" A-2 MULLION FOR HEIGHT UP TO 6'-4 3/8" OR 4 LIGHTS 12"x18"



• TYPE • T-3 •

WHEN OPERATOR CONNECTIONS ARE REQUIRED AT T-3 MULLIONS PLACE THE TEE BARS BACK TO BACK WITH THE SASH ON THE INSIDE OF INNER TEE BAR



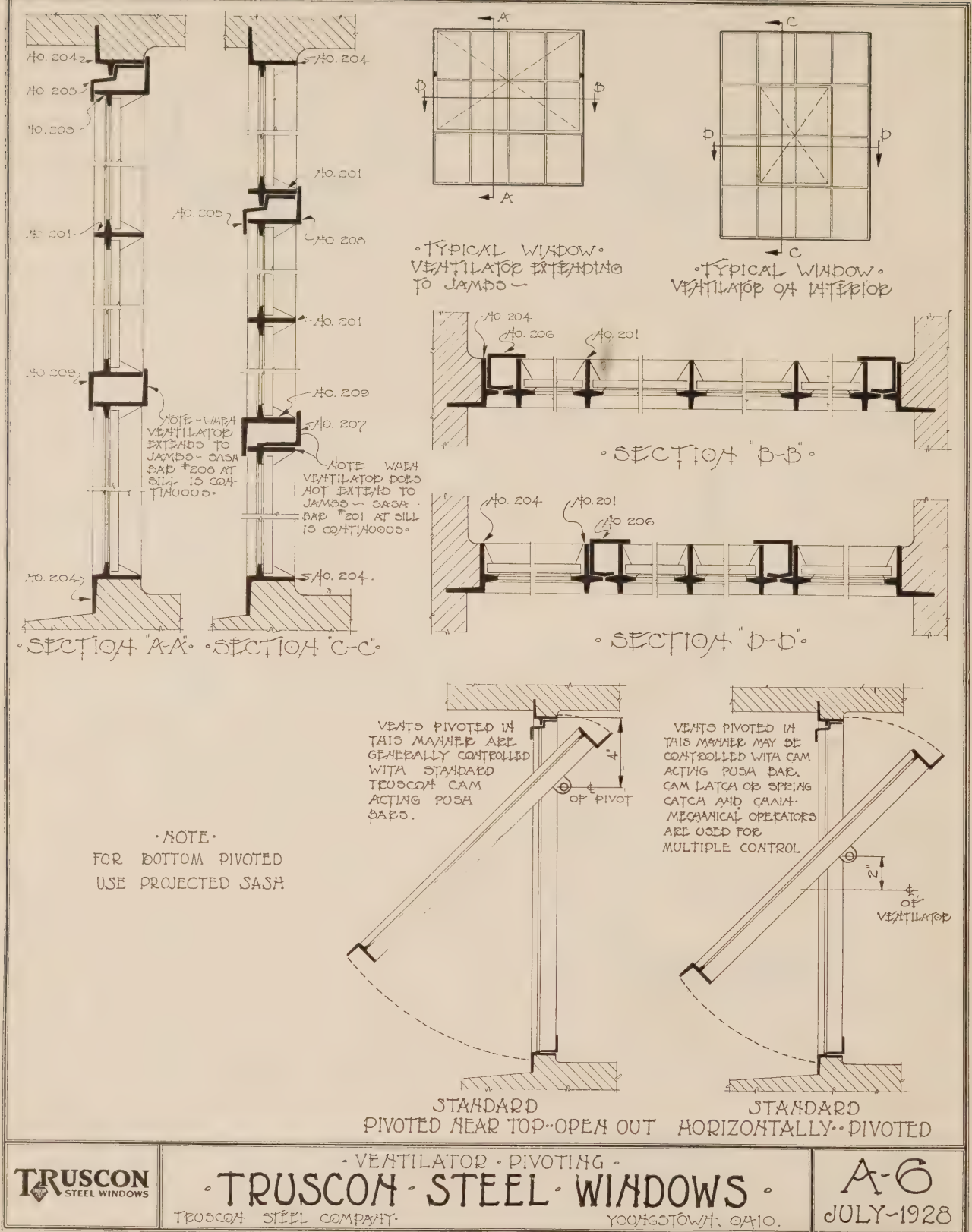
• TYPE • A-2 •
• SPECIAL •

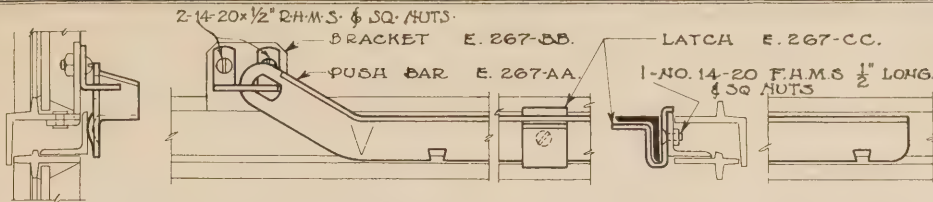
• SCALE • HALF • SIZE •

TRUSCON
STEEL WINDOWS

• VERTICAL • MULLIONS •
TRUSCON • STEEL • WINDOWS •
• TRUSCON • STEEL • COMPANY • • YOUNGSTOWN • OHIO •

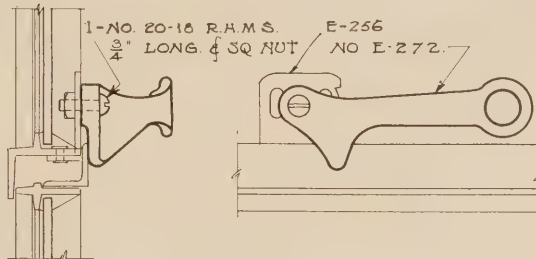
A-11
DEC-1928



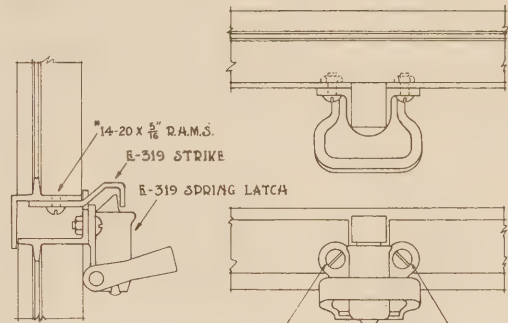


NOTE: STANDARD PUSH BARS ARE FURNISHED IN LENGTHS TO SUIT VENTILATOR. WHEN TYPE OF HARDWARE IS NOT SPECIFIED WITH SASH ORDERED STANDARD SPRING LATCHES ARE FURNISHED.

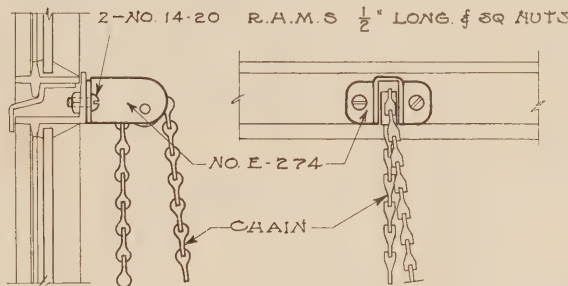
PUSH BAR AND LATCH FOR STANDARD AND STOCK WINDOWS
FOR COMMERCIAL & INDUSTRIAL BUILDINGS.
STEEL



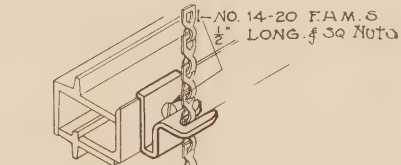
STANDARD CAM LATCH
FURNISHED WITH CHAIN AND ROLLER
BRACKET — BRONZE & MALLEABLE



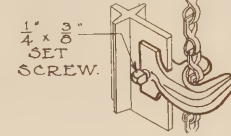
SPRING LATCH
2-14-20 x 1/2 inch R.A.M.S. & NUTS



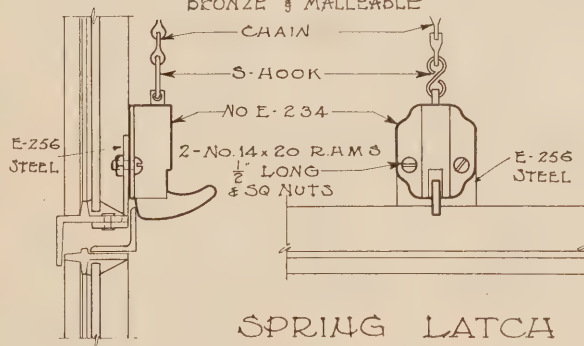
ROLLER BRACKET
ALWAYS USED WITH SPRING
LATCH AND CAM LATCH.
BRONZE & MALLEABLE



CHAIN HOOK
NO. E-267-CC.
ATTACHED AT SILL OF
VENTILATOR.
BRONZE & MALLEABLE



CHAIN HOOK
NO. E-249.
ATTACHED TO VERTICAL MOUNTING
BRONZE & MALLEABLE



SPRING LATCH
MAY BE SUBSTITUTED FOR STANDARD
CAM AND CHAIN IF DESIRED.
BRONZE & MALLEABLE



CHAIN HOOK
NO. E-235-A
ATTACHED TO WALL.
NOTE—ALWAYS GIVE
DISTANCE FROM FLOOR TO
SILL OF VENTILATOR WHEN
ORDERING CHAIN HARDWARE.
BRONZE & MALLEABLE

ALL IRON OR STEEL HARDWARE IS SHEPARDIZED

SCALE 3" = 1'-0"

PIVOTED WINDOW HARDWARE—STANDARDS
TRUSCON STEEL WINDOWS
TRUSCON STEEL COMPANY
YOUNGSTOWN OHIO

A-7
APRIL 1929

TRUSCON STEEL WINDOWS HORIZONTALLY ROLLING

SPECIFICATIONS

General

- 1 All window openings shown on the drawings, unless otherwise specified, shall be equipped with solid steel section windows of the horizontally rolling type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitutions shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification, hot-rolled, new billet steel.

Construction

- 3 All joints shall be mortise and tenon, and air hammer riveted.
- 4 The intersection of horizontal and vertical muntins shall have a dovetail mitre rigidly interlocking the bars.
- 5 No excess metal or projecting surfaces will be permitted where muntin bars intersect.
- 6 Muntin bars shall be continuous from head to sill and from jamb to jamb of window units.
- 7 Alternate units are to be made to roll horizontally on flanged cast rollers furnished by the steel window manufacturer.
- 8 Weathering members between fixed and rolling units are to be provided as shown on Truscon Steel Company's plate A-9.

Hardware

- 9 The rolling units are to be provided at the bottom corners with flanged cast rollers having rigid steel frames.
- 10 Unless otherwise noted, all runs are to be manually operated.

Mechanical Operator

- 11 All runs of horizontal sliding windows, shown on drawings as "mechanically controlled" shall be equipped with a special type of tension mechanical operator as manufactured by the Truscon Steel Company.

Structural Support

- 12 All structural work for the support of the steel windows and the steel angle track on which the rollers operate and the guide angles, shall be provided by another contractor. When detailing the steel work in connection with the horizontally rolling windows, the steel contractor shall obtain sufficient information from the steel window contractor for the size and location of members.

Painting

- 13 All window units shall be given a dip coat of protective paint before shipment.
(For paint specifications see plate S-1 page 134.)

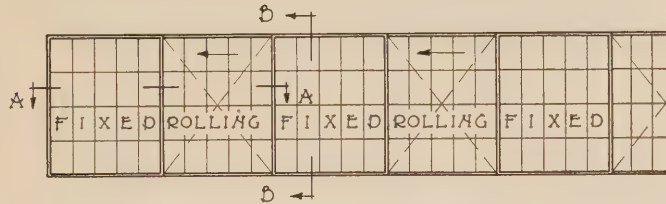
Glazing

- 14 All standard windows shall be glazed on the inside.
- 15 Glass shall be held in place by Truscon, copper-clad steel wire glazing clips.
- 16 Glass shall be bed and face puttied with Truscon metal window putty.
(For putty specifications see plate S-1 page 134.)

Erection

- 17 The erection of windows shall be handled by the manufacturer of same.

These Specifications cover
Drafting Room Standard
A-9 (page 17)



EXTERIOR ELEVATION

NOTE

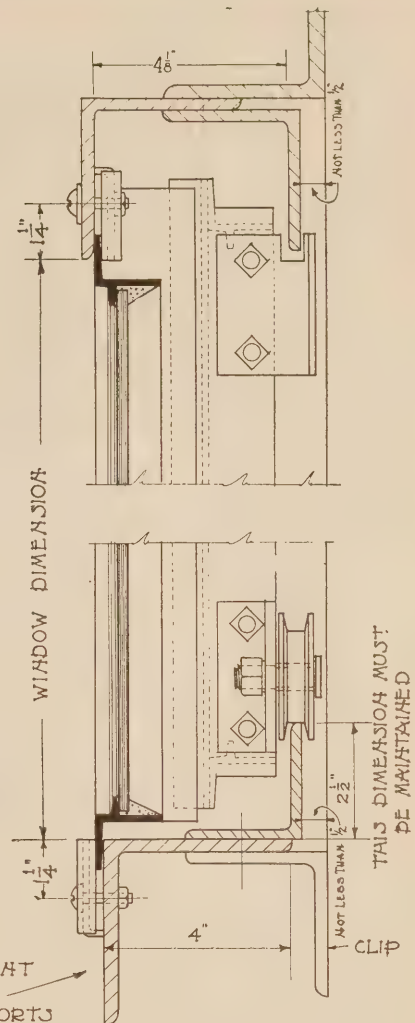
TOTAL OPENING DIMENSION DETERMINED
BY MULTIPLYING WINDOW DIMENSION TIMES
NUMBER OF UNITS TO BE USED
HORIZONTAL ROLLING WINDOW STANDARDS
LIMITED TO THE FOLLOWING TYPES IN 12"x18"
AND 14"x20" GLASS SIZE

33	43	53
34	44	54

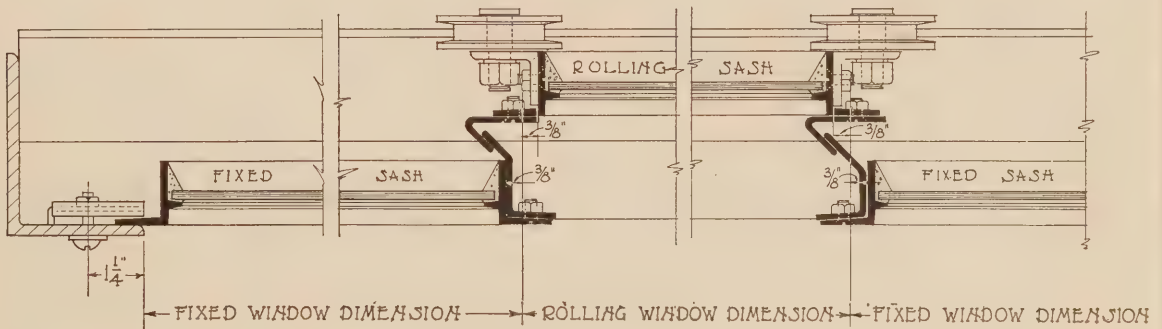
THIS TYPE OF WINDOW IS NOT RECOMMENDED
WHERE ABSOLUTE WEATHER PROOF INSTALLATION
IS REQUIRED

NO OTHER SIZES WILL BE MADE

THIS ANGLE TO BE OF SUFFICIENT
SIZE TO SUPPORT WINDOWS IN
SPAN BETWEEN VERTICAL SUPPORTS
ALL STRUCTURAL STEEL FRAMING
AND TRACK BY OTHERS



SECTION B-B



SECTION A-A

SCALE 3"=1'-0"

TRUSCON
STEEL WINDOWS

• HORIZONTALLY • ROLLING • STANDARDS •
TRUSCON STEEL WINDOWS
TRUSCON STEEL COMPANY YOUNGSTOWN OHIO

A9
DEC-1928

TRUSCON STEEL WINDOWS WITH VERTICALLY PIVOTED VENTILATORS

SPECIFICATIONS

General

- 1 All window openings shown on the drawings, unless otherwise specified, shall be equipped with solid steel section windows with vertically pivoted ventilators as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitutions shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification, hot-rolled, billet steel.

Construction

- 3 All joints shall be mortise and tenon, and air hammer riveted.
- 4 The intersection of horizontal and vertical muntins shall have a dovetail mitre rigidly interlocking the bars.
- 5 No excess metal or projecting surfaces will be permitted where muntin bars intersect.
- 6 Muntin bars shall be continuous from head to sill and from jamb to jamb of window units.
- 7 The members of the windows shall not be bent or deformed during process of manufacture.
- 8 Double contact weathering shall be provided on all four sides of the ventilator.
- 9 Unless otherwise specified, the ventilators shall be pivoted on the vertical center line.
- 10 The pivots shall be solid steel securely riveted to the ventilator and top and bottom bars of window and equipped with $\frac{3}{8}$ " steel removable pins held in place with washers and cotter pins.
- 11 The side rails of ventilators shall be cambered in shop before being fitted to windows, so, when closed, the corners shall engage first, allowing the ventilators to be evenly drawn up to the weather-tight bearing by means of standard locking device.
- 12 Flashing strips are to be provided at the bottom rail of all ventilators of the vertically pivoted type.

Mullion

- 13 Where two or more window units, less than 6'-3" in height, are used in the same opening, they shall be connected together with Truscon Standard Plate Mullion (Type T-1).
- 14 For window units over 6'-3" high Truscon Standard T-Bar Mullion (Type T-2) shall be used.

- 15 All mullions shall be $2\frac{3}{4}$ " wide (2" mullion distance) with slotted holes to allow for adjustment.

- 16 Mullions shall extend $1\frac{3}{8}$ " below the leg of window at sill to provide a firm anchorage in sill construction.

Hardware

- 17 All ventilators shall be equipped with cam latch hardware and friction stay to hold the ventilator in open position. All iron and steel hardware to be sherardized before shipment.

Mechanical Operator

- 18 All runs of ventilators, shown on drawings as "mechanically controlled", shall be equipped with torsion or other approved type of operator, as manufactured by the Truscon Steel Company, and of design as shown in details. (*Insert specifications for proper type of mechanical operators.*)

Structural Support

- 19 All structural work for the support of steel windows shall be provided by another contractor.

Painting

- 20 All window units shall be given a dip coat of protective paint before shipment.
(*For paint specifications see plate S-1 page 134.*)

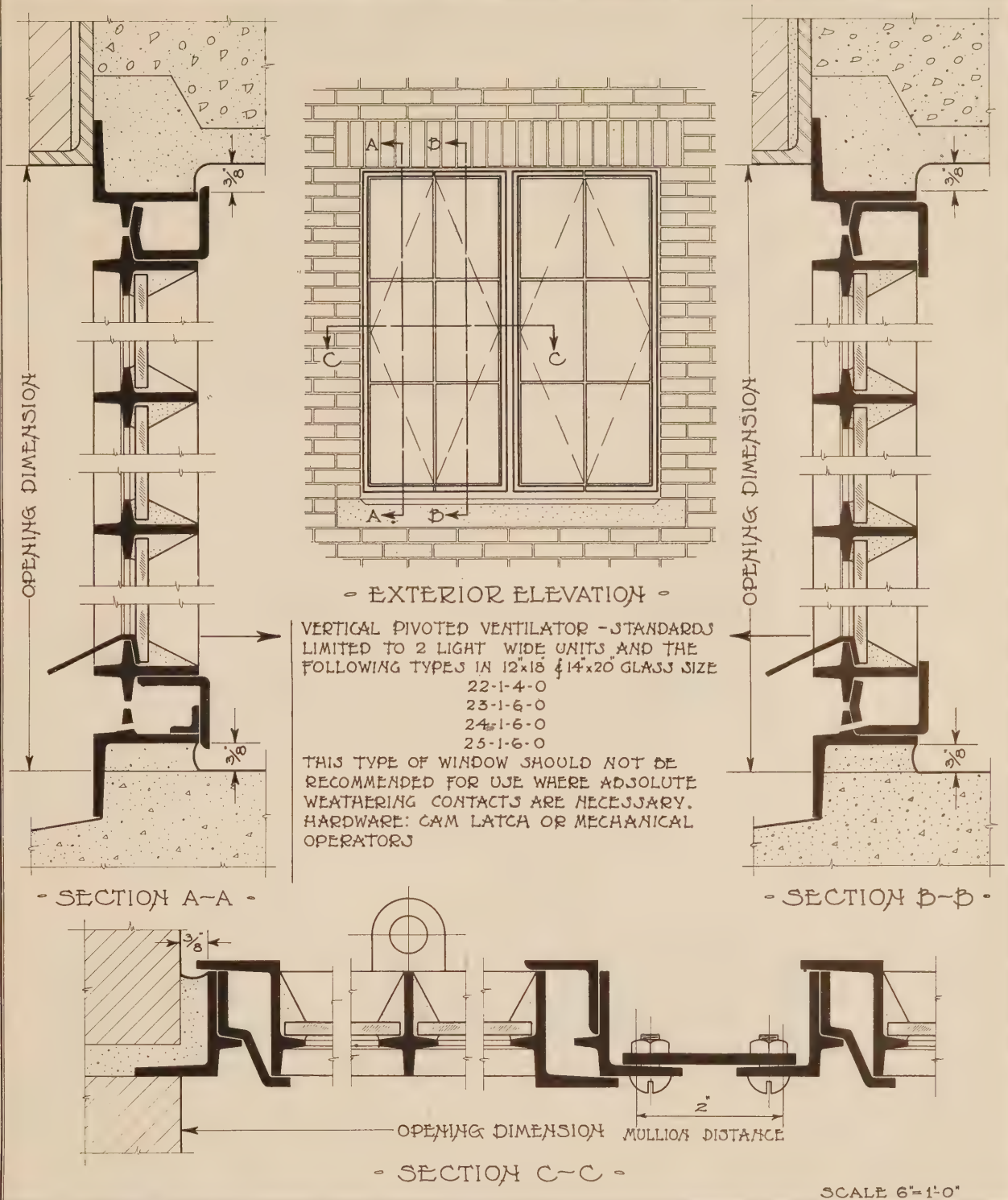
Glazing

- 21 All windows shall be glazed on the inside.
- 22 Glass shall be held in place by Truscon, copper-clad, steel wire glazing clips.
- 23 Glass shall be bed and face puttied with Truscon metal window putty.
(*For putty specifications see plate S-1 page 134.*)

Erection

- 24 Window units must be trued in all directions and set plumb in the masonry.
- 25 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.
- 26 The erection of windows shall be handled by the manufacturer of same.
- 27 After windows have been set in opening and properly built in, the joint between the window frame and masonry shall be carefully pointed up by the mason contractor.

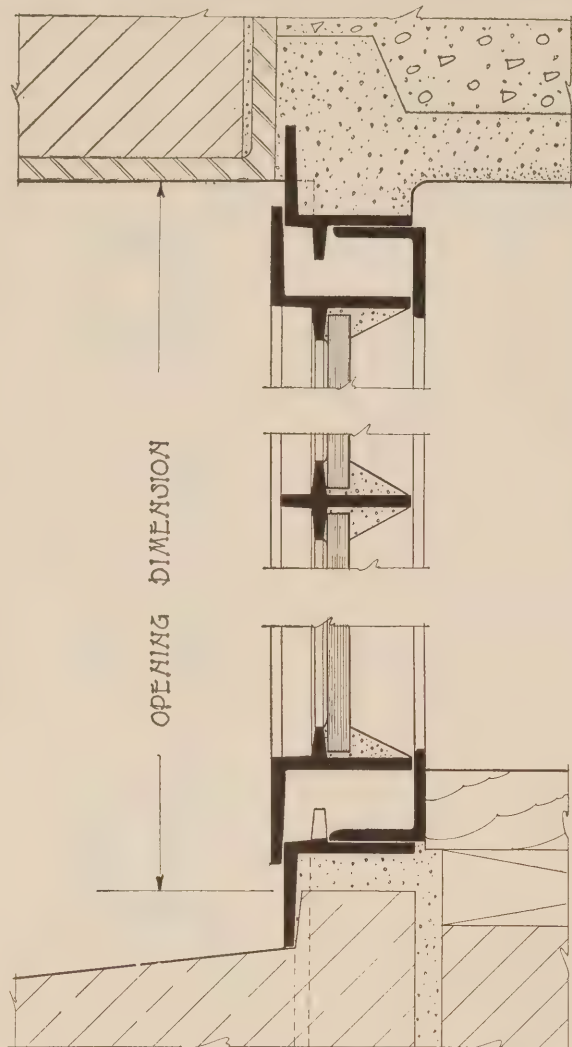
**These Specifications cover
Drafting Room Standard
A-10 (Page 19)**



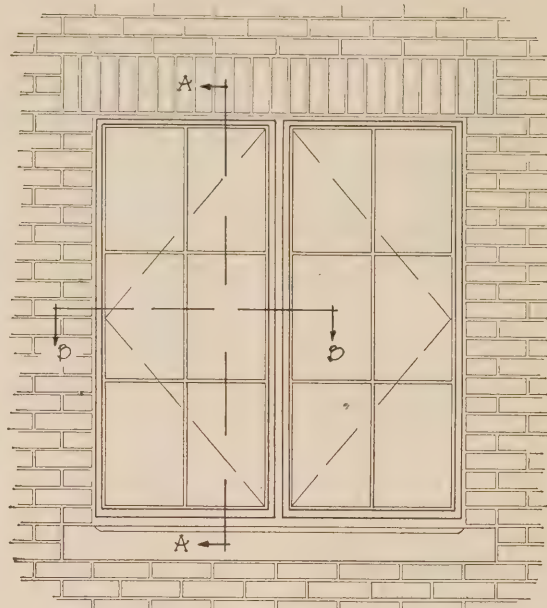
TRUSCON
STEEL WINDOWS

• VERTICALLY • PIVOTED • VENTS • STANDARDS •
TRUSCON • STEEL • WINDOWS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

A-10
APRIL-1929



SEC-AA.



EXTERIOR ELEVATION

SIDE HINGED VENTILATOR-STANDARDS
LIMITED TO 2 LIGHT WIDE UNITS AND THE
FOLLOWING TYPES IN 12"x18" & 14"x20" GLASS SIZE

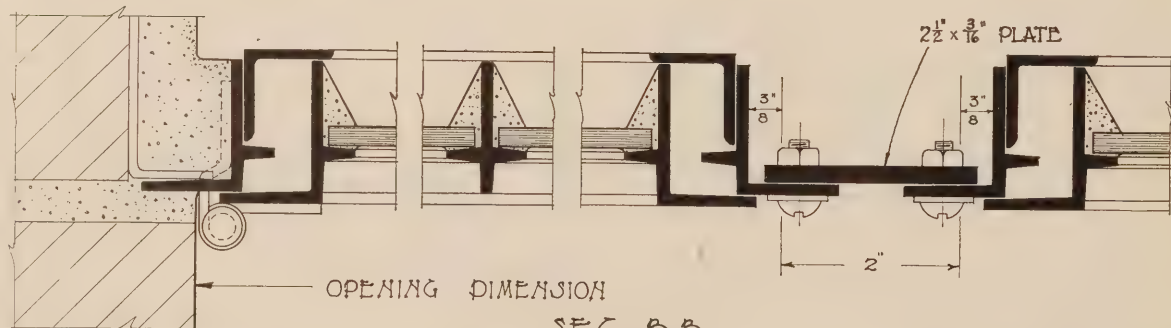
22-1-4-0

23-1-6-0

24-1-6-0

25-1-6-0

CAM HANDLE HARDWARE



- SEC-BB -

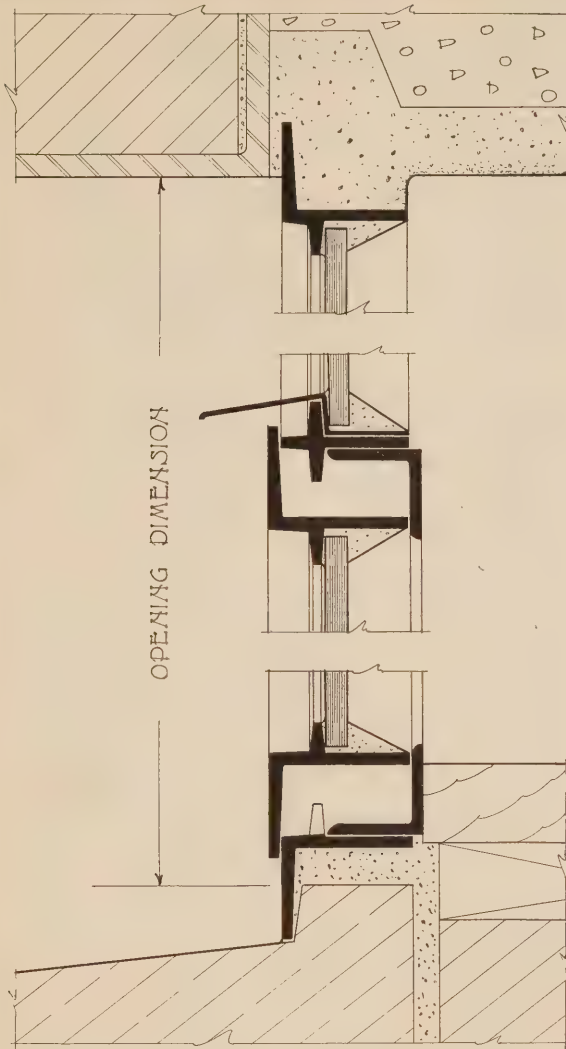
SCALE 6" = 1'-0"

TRUSCON
STEEL WINDOWS

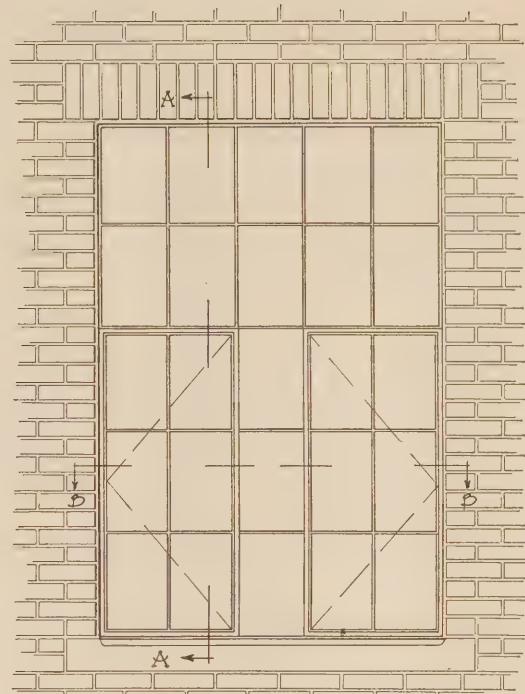
• SIDE-HINGED-VENTS • TO OPEN OUT • STANDARDS •
TRUSCON STEEL WINDOWS
• TRUSCON STEEL COMPANY • • YOUNGSTOWN, OHIO •

A-12
DEC-1928

Specifications on page 6

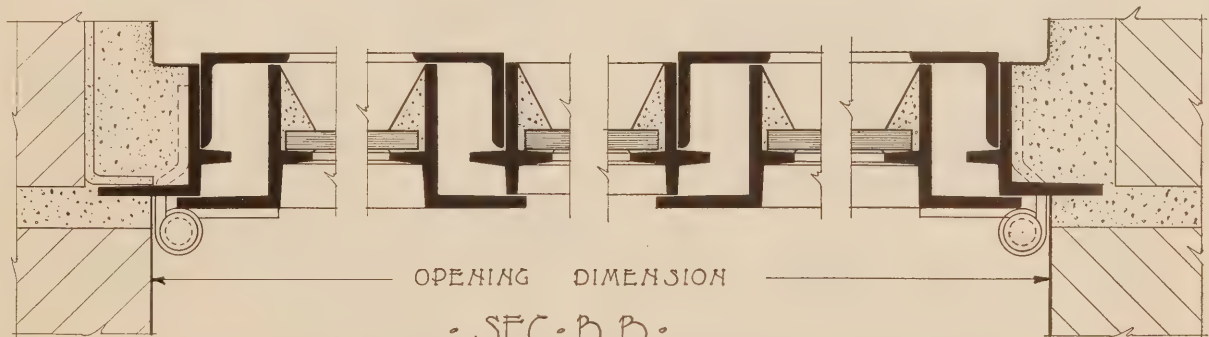


• SEC-AA •



• EXTERIOR-ELEVATION •

NOTE: WINDOWS WITH SPECIAL SIDE
HINGED VENTILATORS WILL BE MADE
IN 12"x18" AND 14"x20" GLASS SIZE ONLY.
VENTS MUST BE HINGED ON OUTSIDE
FRAME SECTION ONLY.
SIZE OF VENTS LIMITED TO 2 LIGHTS
WIDE AND 3 LIGHTS HIGH.
CAM HANDLE HARDWARE.



• SEC-BB •

SCALE 6"=1'-0"

TRUSCON
STEEL WINDOWS

• SIDE HINGED VENTS • TO OPEN OUT • SPECIALS •
• TRUSCON • STEEL • WINDOWS •

• TRUSCON • STEEL • COMPANY •

• YOUNGSTOWN • OHIO •

A-13
JULY-1928

TRUSCON PROJECTED STEEL WINDOWS COMMERCIAL TYPE

SPECIFICATIONS

General

- 1 All windows so indicated on the plans and elevations and called for in these specifications shall be the Commercial Projected type as manufactured by the Truscon Steel Company, of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification, hot-rolled billet steel.

Ventilators Projected Out or Projected In

Construction

- 3 All joints shall be mortise and tenon, and air-hammer riveted.
- 4 The corners of all ventilators to which pivots are attached shall be welded.
- 5 The intersection of horizontal and vertical muntins shall have a dovetail mitre, rigidly interlocking the bars.
- 6 No excess metal or projecting surfaces shall be permitted where muntin bars intersect.
- 7 Muntin bars except where ventilators occur are to be continuous from head to sill and from jamb to jamb.
- 8 The members of the windows shall not be bent or deformed during process of manufacture.
- 9 Ventilators shall have double contact weathering on all four sides.
- 10 The sliding pivot shall be constructed of screw stock brass.
- 11 The side of the window or ventilator frame shall act as a guide for the sliding pivot, and shall be constructed without recess or slot in which dirt or ice may collect, to interfere with the free movement of the ventilator.
- 12 Uniform tension to hold ventilator solidly in any desired position shall be realized by inserting a coil spring between the shoulder on the pivot and the hinge butt attached to the ventilator.
- 13 There shall be two heavy supporting arms attached to the ventilator and frame, designed to be concealed when ventilator is closed. The rivet holes in supporting arms shall have brass bushings.
- 14 Ventilators Projected Out when open shall have no part of the ventilator projecting inside the normal plane of the window.
- 15 Ventilators Projected In shall not project outside the normal plane of the window.

Mullions

- 16 Where two or more window units, less than 6'-3" in height, are used in the same opening, they shall be

connected with Truscon Standard Plate Mullions (Type T-1).

- 17 For window units over 6'-3" high, and up to and including 10'-9½" high, Truscon Standard T-Bar Mullions (Type T-2) shall be used.
- 18 For all window openings over 10'-9½" high, Truscon Standard double T-Bar Mullions (Type T-3) shall be used.
- 19 All mullions shall be 2¾" wide (2" mullion distance) with slotted holes to allow for adjustment.
- 20 Mullions shall extend 1⅝" below leg of window at sill to provide firm anchorage in sill construction.

Hardware

- 21 All hardware shall be malleable iron, sherardized, unless otherwise specified.
- 22 All ventilators Opening Out and within reach of the floor, shall be equipped with a malleable iron cam latch handle of standard Truscon design.
- 23 All ventilators Opening Out, and not easily accessible, shall be equipped with malleable iron cam latch handle and pole-hook ring.
(Truscon automatic chain operated latch may be substituted for cam latch and pole hook at additional cost.)
- 24 All ventilators Opening In shall be equipped with automatic spring latch.
(See plate B-30 for Standard Hardware Details.)

Structural Support

- 25 All structural work for the support of steel windows shall be provided by another contractor.

Painting

- 26 All window units shall be given a shop coat of protective paint before shipment.
(For paint specifications see plate S-1 page 134.)

Glazing

- 27 Glass shall be held in place by Truscon copper clad steel wire glazing clips.
- 28 Glass shall be bed and face puttied with Truscon metal window putty.
(For putty specifications see plate S-1 page 134.)

Erection

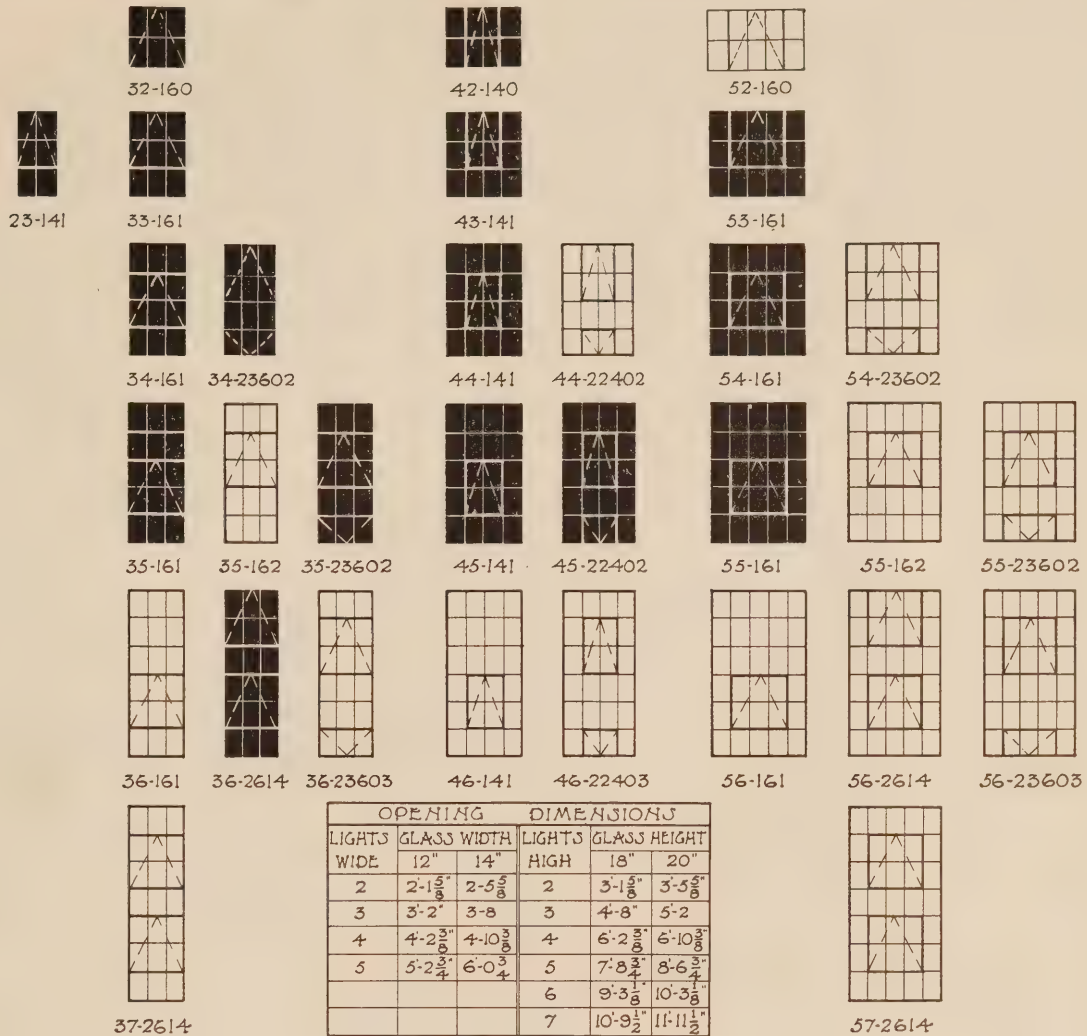
- 29 Window units must be trued in all directions and set plumb in the masonry before glazing.
- 30 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.
- 31 The erection of windows shall be handled by the manufacturer of same.
- 32 After windows have been set in opening and properly built in, the joint between the window frames and masonry shall be carefully pointed up by the mason contractor.

**These Specifications cover the following
Drafting Room Standards:**

B-1 (page 23)
B-2 (page 24)

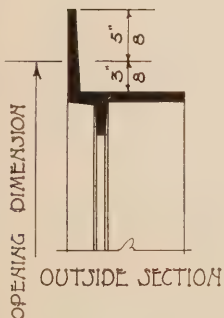
B-3 (page 25)
B-30 (page 33)

14" x 20" AND 12" x 18" GLASS SIZE



OPENING DIMENSIONS					
LIGHTS WIDE	GLASS WIDTH		LIGHTS HIGH	GLASS HEIGHT	
	12"	14"		18"	20"
2	2'-1 ⁵ / ₈ "	2'-5 ⁵ / ₈ "	2	3'-1 ⁵ / ₈ "	3'-5 ⁵ / ₈ "
3	3'-2"	3'-8"	3	4'-8"	5'-2"
4	4'-2 ³ / ₈ "	4'-10 ³ / ₈ "	4	6'-2 ⁵ / ₈ "	6'-10 ³ / ₈ "
5	5'-2 ³ / ₄ "	6'-0 ³ / ₄ "	5	7'-8 ³ / ₄ "	8'-6 ³ / ₄ "
			6	9'-3 ¹ / ₈ "	10'-3 ¹ / ₈ "
			7	10'-9 ¹ / ₂ "	11'-11 ¹ / ₂ "

• USE STANDARD TYPES & SIZES WHENEVER POSSIBLE •



12'-18"	12'-18"	12'-18"	12'-18"	12'-18"
12'-18"	11'-17 ⁵ / ₈ "	12'-17 ⁵ / ₈ "	11'-17 ⁵ / ₈ "	12'-18"
12'-18"	11'-17 ⁵ / ₈ "	12'-17 ⁵ / ₈ "	11'-17 ⁵ / ₈ "	12'-18"
12'-18"	12'-18"	12'-18"	12'-18"	12'-18"
12'-18"	12'-18"	12'-18"	12'-18"	12'-18"
12'-18"	11'-16 ³ / ₄ "	12'-16 ³ / ₄ "	11'-16 ³ / ₄ "	12'-18"

14'-20"	14'-20"	14'-20"	14'-20"	14'-20"
14'-20"	13'-19 ⁵ / ₈ "	14'-19 ⁵ / ₈ "	13'-19 ⁵ / ₈ "	14'-20"
14'-20"	13'-19 ⁵ / ₈ "	14'-19 ⁵ / ₈ "	13'-19 ⁵ / ₈ "	14'-20"
14'-20"	14'-20"	14'-20"	14'-20"	14'-20"
14'-20"	14'-20"	14'-20"	14'-20"	14'-20"
14'-20"	13'-18 ³ / ₄ "	14'-18 ³ / ₄ "	13'-18 ³ / ₄ "	14'-20"

NOTE: STOCK UNITS INDICATED BY WHITE LINES ON SOLID BACKGROUND ARE DELIVERED IMMEDIATELY FROM OUR WAREHOUSES.

14" x 20" AND 12" x 18" GLASS SIZES OCCUR ONLY IN STATIONARY PART OF WINDOW. GLASS IN ALL VENTILATORS TO BE CUT AS SHOWN.

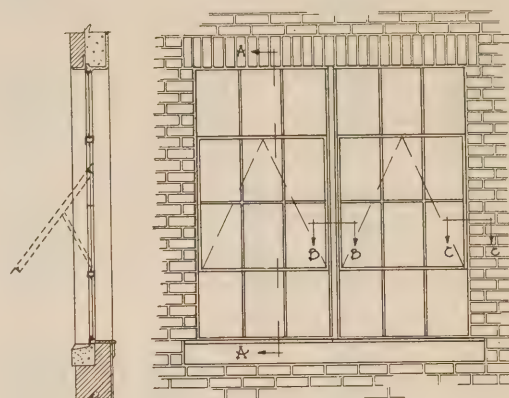
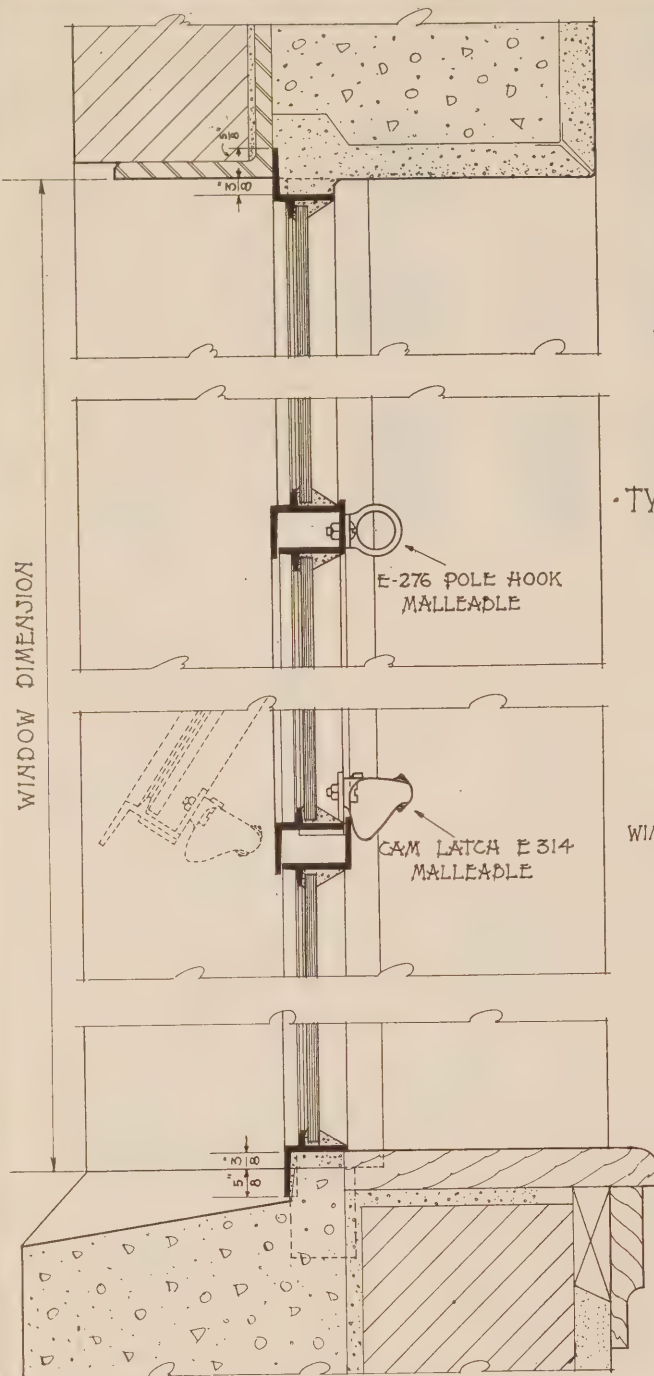
VENTILATORS ARE INDICATED BY CROSSED DASHED LINES. ALL VENTILATORS PROJECT OUT EXCEPT 1 LIGHT HIGH VENT WHICH PROJECTS IN.

GLASS SIZES FOR STANDARD COMMERCIAL PROJECTED WINDOWS

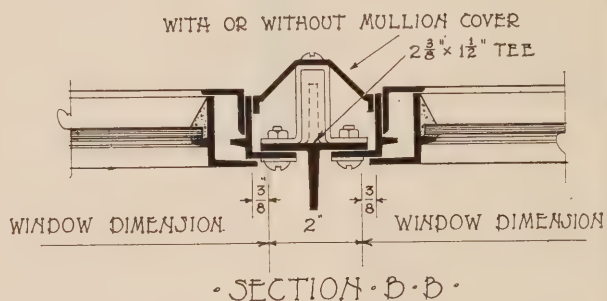
• FORMERLY DESIGNATED INDUSTRIAL PROJECTED WINDOWS •

STANDARDS • TRUSCON COMMERCIAL PROJECTED WINDOWS • TRUSCON STEEL COMPANY • YOUNGSTOWN OHIO •

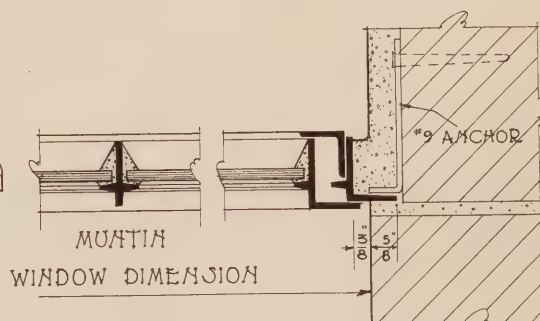
B-1 APRIL 1929



• TYPICAL EXTERIOR ELEVATION & SECTION •



• SECTION B-B •



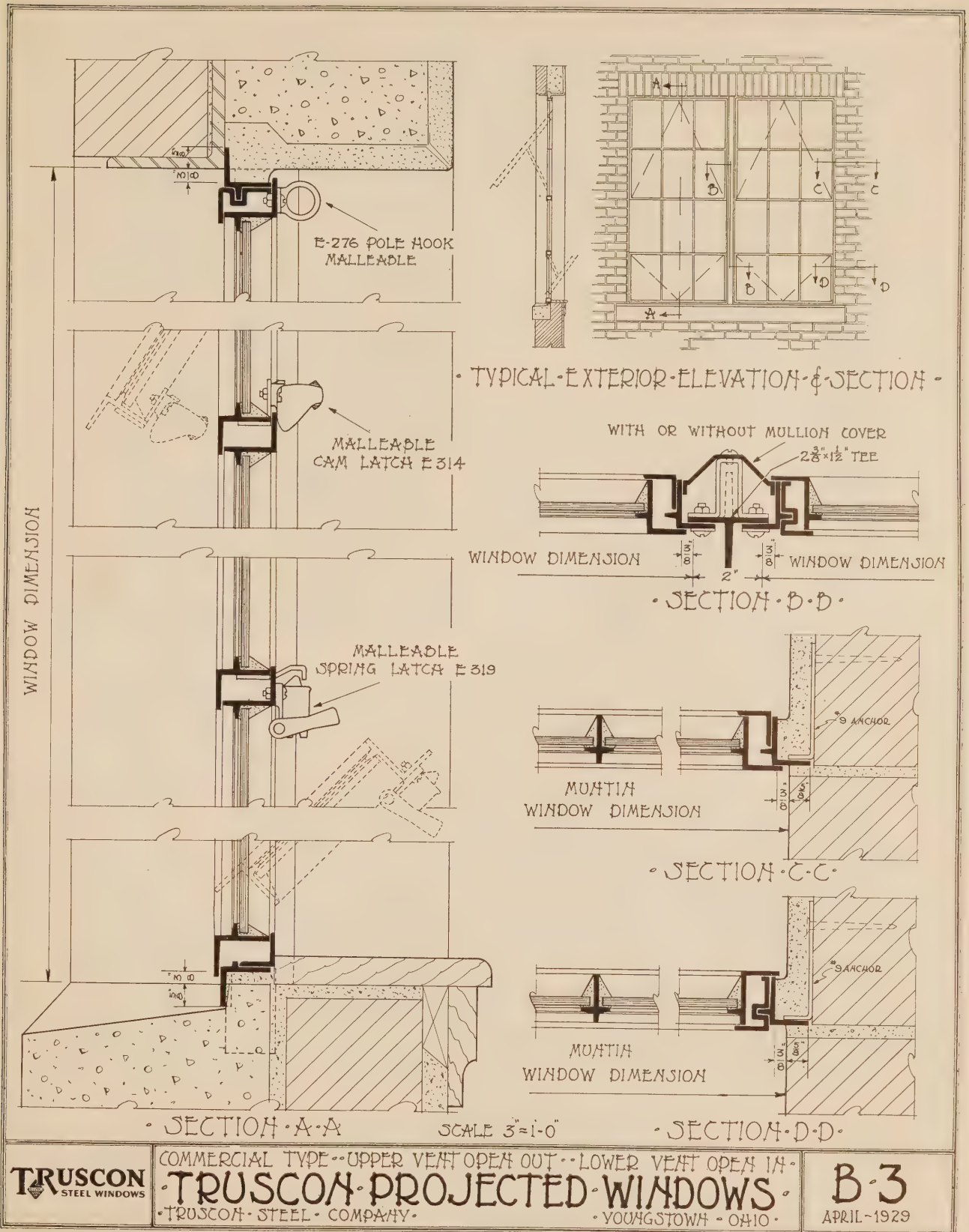
• SECTION C-C •

• SCALE • 3" = 1'-0"

TRUSCON
STEEL WINDOWS

• COMMERCIAL • TYPE • VENTILATOR • OPEN • OUT •
TRUSCON PROJECTED WINDOWS
 • TRUSCON • STEEL • COMPANY • YOUNGSTOWN • OHIO •

B-2
 APRIL - 1929



TRUSCON UTILITY STEEL WINDOWS

SPECIFICATIONS

General

- 1 All windows so indicated on the plans and elevations and called for in these specifications shall be the Utility Projected type as manufactured by the Truscon Steel Company, of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification, hot-rolled billet steel.

Ventilators Projected Out or Projected In

Construction

- 3 All joints shall be mortise and tenon, and air-hammer riveted.
- 4 The corners of all ventilators to which pivots are attached shall be welded.
- 5 The intersection of horizontal and vertical muntins shall have a dovetail mitre, rigidly interlocking the bars.
- 6 No excess metal or projecting surfaces shall be permitted where muntin bars intersect.
- 7 Muntin bars except where ventilators occur are to be continuous from head to sill and from jamb to jamb.
- 8 The members of the windows shall not be bent or deformed during process of manufacture.
- 9 Ventilators shall have double contact weathering on all four sides.
- 10 The sliding pivot shall be constructed of screw stock brass.
- 11 The side of the window or ventilator frame shall act as a guide for the sliding pivot, and shall be constructed without recess or slot in which dirt or ice may collect, to interfere with the free movement of the ventilator.
- 12 Uniform tension to hold ventilator solidly in any desired position shall be realized by inserting a coil spring between the shoulder on the pivot and the hinge butt attached to the ventilator.
- 13 There shall be two heavy supporting arms attached to the ventilator and frame, designed to be concealed when ventilator is closed. The rivet holes in supporting arms shall have brass bushings.
- 14 Ventilators Projected Out when open shall have no part of the ventilator projecting inside the normal plane of the window.
- 15 Ventilators Projected In shall not project outside the normal plane of the window.

Mullions

- 16 Where two or more window units, less than 6'-3" in height, are used in the same opening, they shall be connected with Truscon Standard Plate Mullions (Type T-1).

- 17 For window units over 6'-3" high, and up to and including 10'-9½" high, Truscon Standard T-Bar Mullions (Type T-2) shall be used.

- 18 For all window openings over 10'-9½" high, Truscon Standard double T-Bar Mullions (Type T-3) shall be used.

- 19 All mullions shall be 2¾" wide (2" mullion distance) with slotted holes to allow for adjustment.

- 20 Mullions shall extend 1⅜" below leg of window at sill to provide firm anchorage in sill construction.

Hardware

- 21 All hardware shall be malleable iron, sherardized, unless otherwise specified.

- 22 All ventilators Opening Out and within reach of the floor, shall be equipped with a malleable iron cam latch handle of standard Truscon design.

- 23 All ventilators Opening Out, and not easily accessible shall be equipped with malleable iron cam latch handle and pole-hook ring.

(Truscon automatic chain operated latch may be substituted for cam latch and pole hook at additional cost.)

- 24 All ventilators Opening In shall be equipped with automatic spring latch.

(See plate B-30 for Standard Hardware Details.)

Structural Support

- 25 All structural work for the support of steel windows shall be provided by another contractor.

Painting

- 26 All window units shall be given a shop coat of protective paint before shipment.

(For paint specifications see plate S-1, page 134.)

Glazing

- 27 Glass shall be held in place by Truscon copper clad steel wire glazing clips.

- 28 Glass shall be bed and face puttied with Truscon metal window putty.

(For putty specifications see plate S-1, page 134.)

Erection

- 29 Window units must be trued in all directions and set plumb in the masonry before glazing.

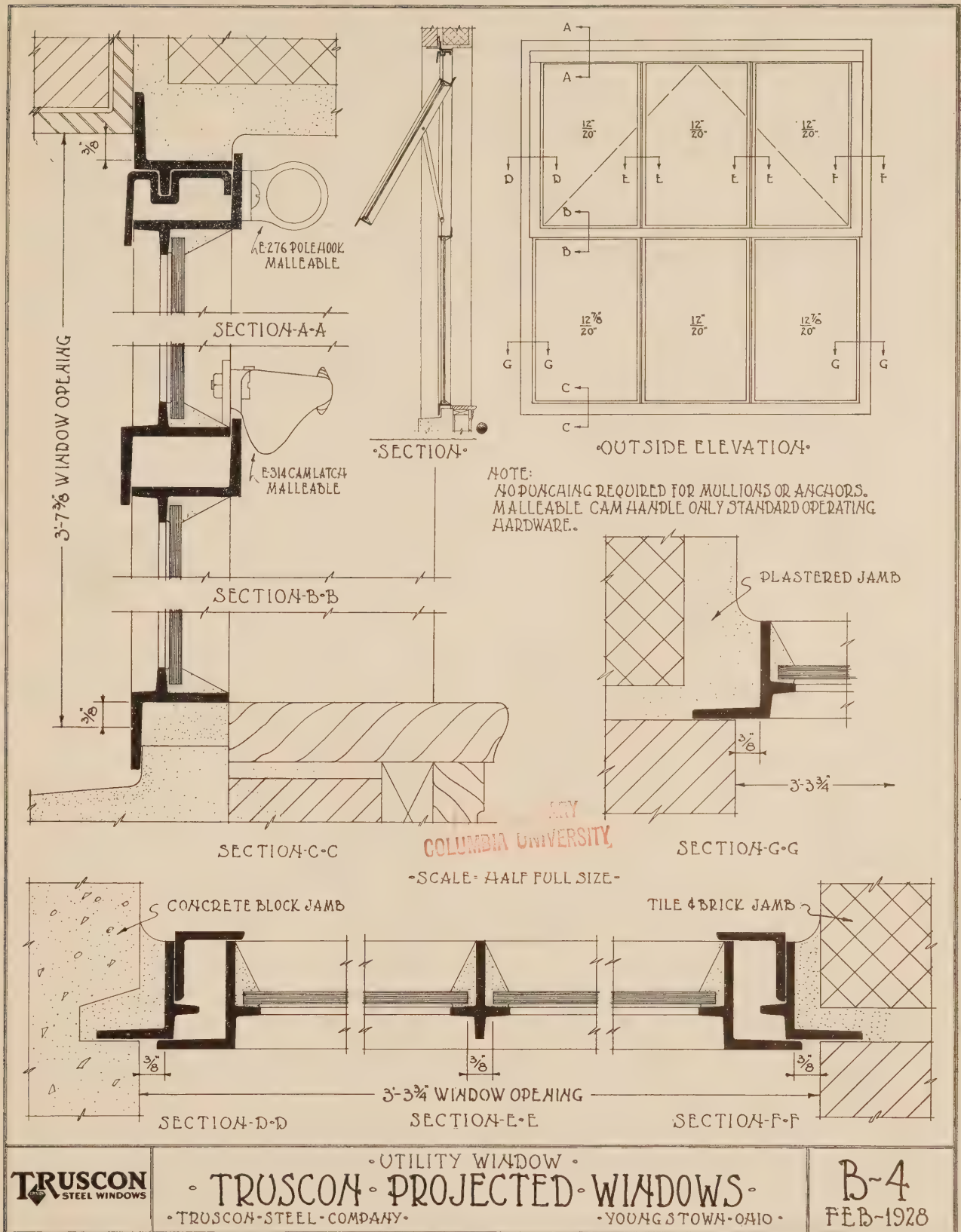
- 30 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.

- 31 The erection of windows shall be handled by the manufacturer of same.

- 32 After windows have been set in opening and properly built in, the joint between the window frames and masonry shall be carefully pointed up by the mason contractor.

**These Specifications cover
Drafting Room Standard**

B-4 (page 27)



Specifications on page 26

TRUSCON PROJECTED STEEL WINDOWS

ARCHITECTURAL TYPE

SPECIFICATIONS

General

- 1 All windows so indicated on the plans and elevations and called for in these specifications shall be the Architectural Projected type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification, hot-rolled billet steel.

Ventilators Projected Out or Projected In

Construction

- 3 All joints shall be mortise and tenon, and air-hammer riveted.
- 4 The four corners of all ventilators shall be welded and ground smooth.
- 5 The four corners of the sash shall be welded and ground smooth.
- 6 The intersection of horizontal and vertical muntins shall have a dovetail mitre, rigidly interlocking the bars.
- 7 No excess metal or projecting surfaces shall be permitted where muntin bars intersect.
- 8 Muntin bars except where ventilators occur are to be continuous from head to sill and from jamb to jamb.
- 9 The members of the windows shall not be bent or deformed during process of manufacture.
- 10 Ventilators shall have double contact weathering on all four sides.
- 11 The sliding pivots shall be constructed of screw stock brass.
- 12 The outside section of the window shall be a heavy, solid rolled copper bearing steel channel (210 section).
- 13 The side of the window or ventilator frame shall act as a guide for the sliding pivot, and shall be constructed without recess or slot in which dirt or ice may collect, to interfere with the free movement of the ventilator.
- 14 Uniform tension to hold ventilator solidly in any desired position shall be realized by inserting a coil spring between the shoulder on the pivot and the hinge butt attached to the ventilator.
- 15 There shall be two heavy supporting arms attached to the ventilator and frame, designed to be concealed when ventilator is closed. The rivet holes in supporting arms shall have brass bushings.
- 16 Ventilators Projected Out when opened shall have no part of the ventilator projecting inside the normal plane of the windows.
- 17 Ventilators Projected In shall not project outside the normal plane of the windows.

Mullions

- 18 Where two or more window units, less than 6'-3" in

height, are used in the same opening, they shall be connected with Truscon Standard Plate Mullions (Type T-1).

- 19 For window units over 6'-3" high, and up to and including 10'-9½" high, Truscon Standard T-Bar Mullions (Type T-2) shall be used.
- 20 For all window openings over 10'-9½" high, Truscon Standard double T-Bar Mullions (Type T-3) shall be used.
- 21 All mullions shall be 2¾" wide (2" mullion distance) with slotted holes to allow for adjustment.
- 22 Mullions shall extend 1⅝" below leg of window at sill to provide firm anchorage in sill construction.
- 23 Truscon Standard Architectural Mullion Cover, as shown on Drafting Room Standards B-22 and B-23 shall be used with all Architectural Projected window mullions.

Hardware

- 24 All hardware shall be bronze throughout.
- 25 All ventilators Opening Out, and within reach of the floor, shall be equipped with a bronze cam latch handle of standard Truscon design.
- 26 All ventilators Opening Out, and not easily accessible, shall be equipped with bronze cam latch handle and pole hook ring.
- 27 All ventilators Opening In shall be equipped with automatic spring latch.

Structural Support

- 28 All structural work for the support of steel windows shall be provided by another contractor.

Painting

- 29 All window units shall be given a shop coat of protective paint before shipment.

(For paint specifications see plate S-1 page 134.)

Glazing

- 30 All lights shall be glazed with glazing angles continuous around lights attached with brass screws and round nuts.
- 31 Glass shall be bed and face puttied with Truscon metal window putty.

Always specify glass thickness.

(For putty specifications see plate S-1 page 134.)

Erection

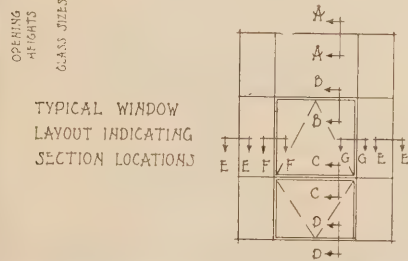
- 32 Window units must be trued in all directions and set plumb in the masonry before glazing.
- 33 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.
- 34 The erection of windows shall be handled by the manufacturer of same.
- 35 After windows have been set in opening and properly built in, the joint between the window frames and masonry shall be carefully pointed up by the mason contractor.

These Specifications cover the following
Drafting Room Standards:

B-21 (page 29)
B-22 (page 30)

B-23 (page 31)
B-42 (page 32)

OPENING WIDTH	3' 0"	3' 6"	4' 0"	4' 6"	5' 0"
GLASS SIZES	34 1/4 13 3/4 24 1/4 13 3/4	7 3/4 24 7 3/4 36 46	10 3/4 24 10 3/4 40 46	8 3/8 34 4 8 3/8 46 46	11 5/8 34 1 11 5/8 50 46
TYPE	3046	3646	4046	4646	5046
OPENING WIDTH	5' 0"	5' 6"	6' 0"	6' 6"	7' 0"
GLASS SIZES	16 3/4 24 1/4 16 3/4	16 3/4 24 1/4 16 3/4	16 3/4 24 1/4 16 3/4	16 3/4 24 1/4 16 3/4	16 3/4 24 1/4 16 3/4
TYPE	3050	3650	4050	4650	5050
OPENING WIDTH	5' 6"	6' 0"	6' 6"	7' 0"	7' 6"
GLASS SIZES	19 3/4 24 1/4 19 3/4	19 3/4 24 1/4 19 3/4	19 3/4 24 1/4 19 3/4	19 3/4 24 1/4 19 3/4	19 3/4 24 1/4 19 3/4
TYPE	3056	3656	4056	4656	5056
OPENING WIDTH	6' 0"	6' 6"	7' 0"	7' 6"	8' 0"
GLASS SIZES	21 1/4 27 1/4 21 1/4	21 1/4 27 1/4 21 1/4	21 1/4 27 1/4 21 1/4	21 1/4 27 1/4 21 1/4	21 1/4 27 1/4 21 1/4
TYPE	3060	3660	4060	4660	5060
OPENING WIDTH	6' 6"	7' 0"	7' 6"	8' 0"	8' 6"
GLASS SIZES	16 3/4 21 1/4 20 3/8 16 3/4	16 3/4 21 1/4 20 3/8 16 3/4	16 3/4 21 1/4 20 3/8 16 3/4	16 3/4 21 1/4 20 3/8 16 3/4	16 3/4 21 1/4 20 3/8 16 3/4
TYPE	3066	3666	4066	4666	5066
OPENING WIDTH	7' 0"	7' 6"	8' 0"	8' 6"	9' 0"
GLASS SIZES	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4
TYPE	3076	3676	4076	4676	5076
OPENING WIDTH	7' 6"	8' 0"	8' 6"	9' 0"	9' 6"
GLASS SIZES	16 3/4 27 1/4 26 5/8 16 3/4	16 3/4 27 1/4 26 5/8 16 3/4	16 3/4 27 1/4 26 5/8 16 3/4	16 3/4 27 1/4 26 5/8 16 3/4	16 3/4 27 1/4 26 5/8 16 3/4
TYPE	3076	3676	4076	4676	5076
OPENING WIDTH	8' 0"	8' 6"	9' 0"	9' 6"	10' 0"
GLASS SIZES	19 3/4 27 1/4 26 5/8 19 3/4	19 3/4 27 1/4 26 5/8 19 3/4	19 3/4 27 1/4 26 5/8 19 3/4	19 3/4 27 1/4 26 5/8 19 3/4	19 3/4 27 1/4 26 5/8 19 3/4
TYPE	3080	3680	4080	4680	5080
OPENING WIDTH	8' 6"	9' 0"	9' 6"	10' 0"	10' 6"
GLASS SIZES	22 5/8 27 1/4 26 7/8 22 5/8	22 5/8 27 1/4 26 7/8 22 5/8	22 5/8 27 1/4 26 7/8 22 5/8	22 5/8 27 1/4 26 7/8 22 5/8	22 5/8 27 1/4 26 7/8 22 5/8
TYPE	3086	3686	4086	4686	5086
OPENING WIDTH	9' 0"	9' 6"	10' 0"	10' 6"	11' 0"
GLASS SIZES	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4	16 3/4 24 1/4 23 5/8 16 3/4
TYPE	3090	3690	4090	4690	5090



DIMENSIONS OF TYPES SHOWN ARE MASONRY OPENING DIMENSIONS. FOR TYPICAL DETAILS SEE PLATES B22, B23, B30 & B42.

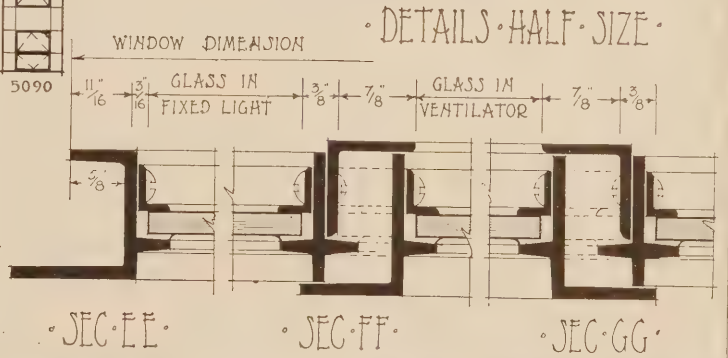
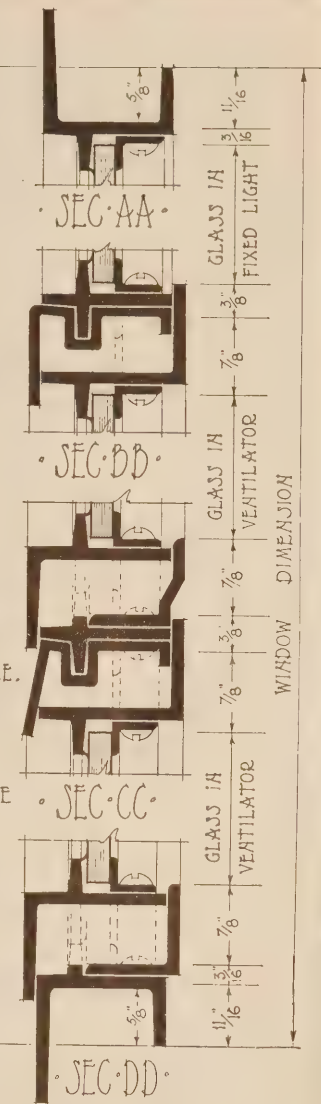
UNITS MAY BE COMBINED WITH MULLIONS SHOWN ON PLATES B22 & B23 TO FILL OPENINGS OF ANY WIDTH. TO OBTAIN WIDTH OF OPENING ADD 2" FOR EACH MULLION REQUIRED.

GLASS SIZES SHOWN OCCUR ONLY IN STATIONARY PART OF WINDOWS. GLASS IN VENTILATORS IS 1 3/4" SMALLER IN WIDTH AND HEIGHT. ALWAYS SPECIFY THICKNESS OF GLASS. WINDOWS ARE GLAZED ON INSIDE.

STANDARD HARDWARE SOLID BRONZE.

- INDICATES VENTS OPENING OUT.
- INDICATES VENTS OPENING IN.

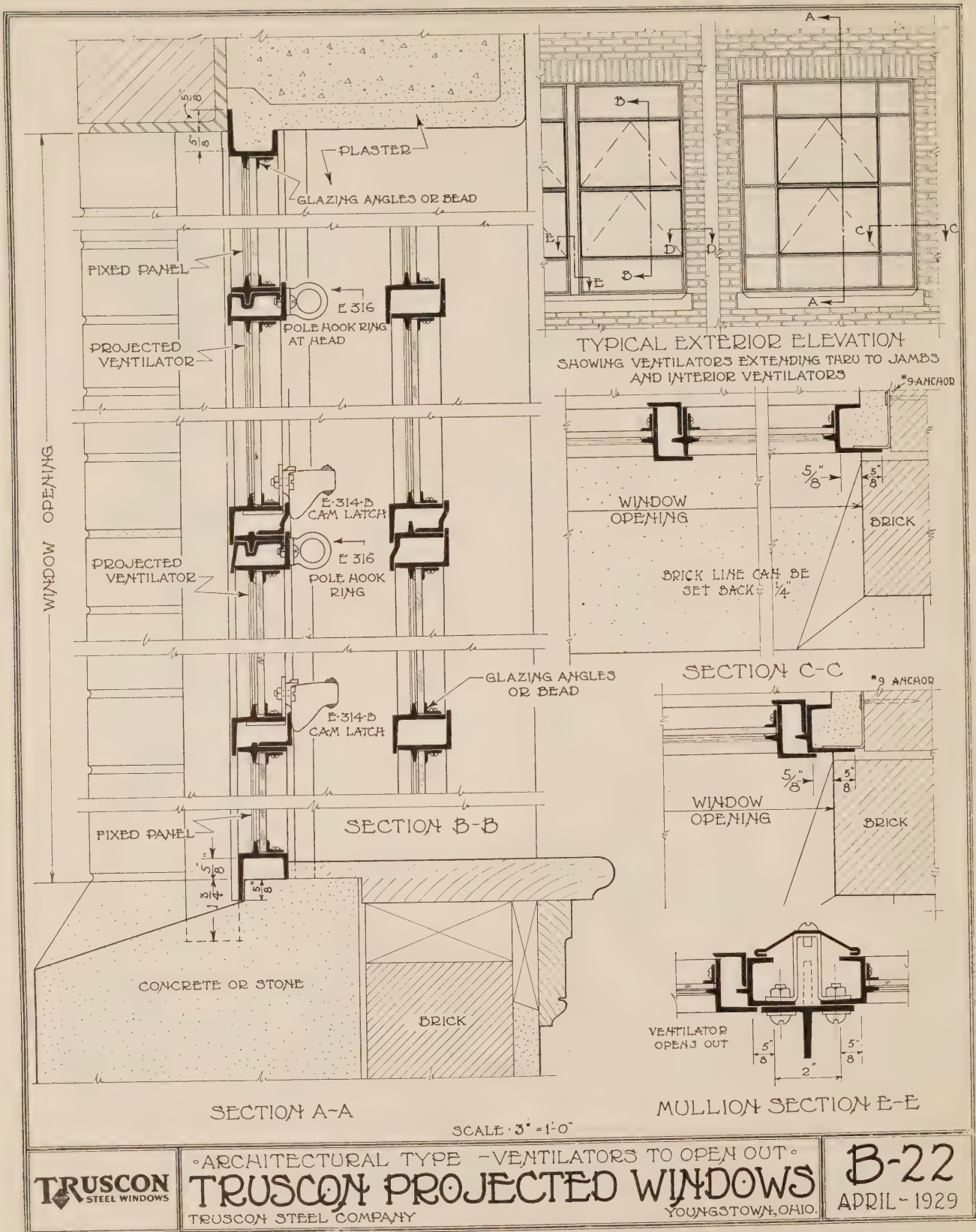
SASH CAN BE FURNISHED INSIDE OR OUTSIDE PUTTY GLAZED OMITTING GLAZING ANGLES



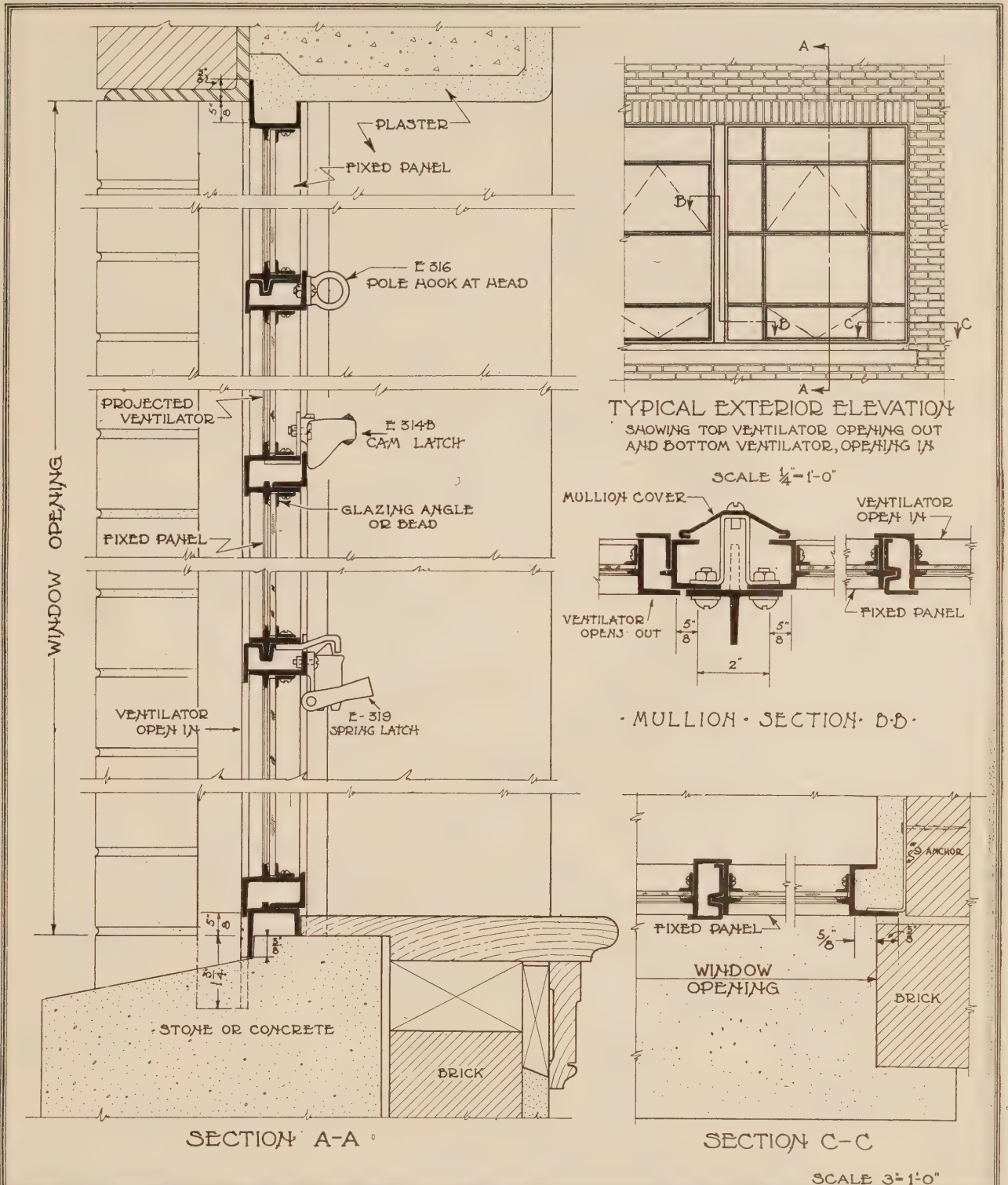
TRUSCON STEEL WINDOWS

ARCHITECTURAL TYPE... STANDARDS...
TRUSCON PROJECTED WINDOWS
 TRUSCON STEEL COMPANY YOUNGSTOWN OHIO

B-21
 JULY-1928



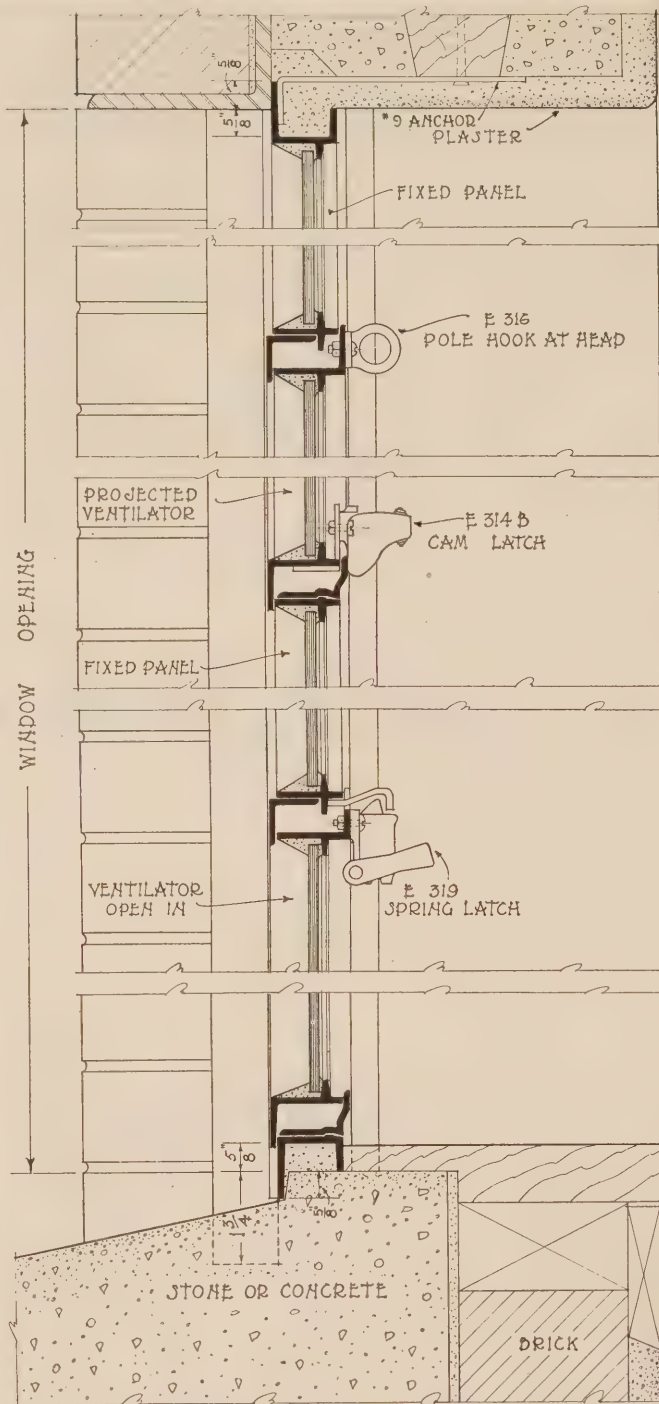
Specifications on page 28



TRUSCON
STEEL WINDOWS

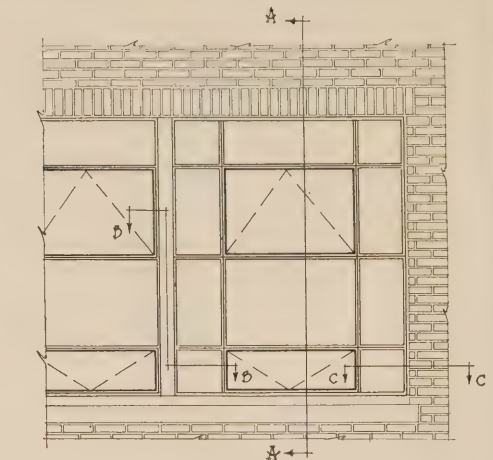
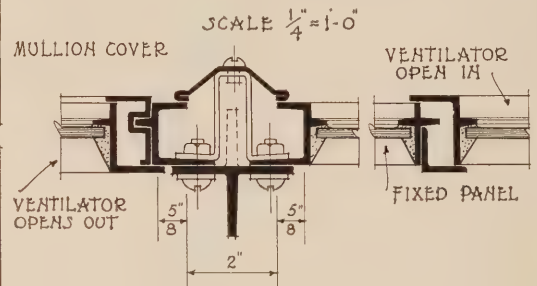
ARCHITECTURAL TYPE—TOP VENTS OPEN OUT—BOTTOM VENTS OPEN IN—
TRUSCON PROJECTED WINDOWS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO.

B-23
APRIL-1929

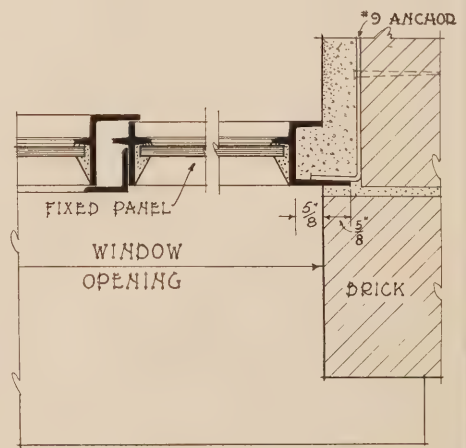


SECTION AA

NOTE FOR STANDARD TYPES SEE PLATE B-21.

TYPICAL EXTERIOR ELEVATION
SHOWING TOP VENTILATOR OPENING OUT
AND BOTTOM VENTILATOR OPENING IN

MULLION SECTION BB



SECTION CC

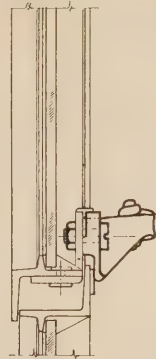
SCALE 3" = 1'-0"

TRUSCON
STEEL WINDOWS

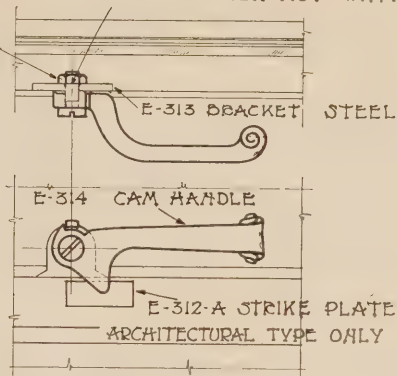
ARCHITECTURAL OUTSIDE GLAZED TYPES
TRUSCON PROJECTED WINDOWS
 TRUSCON STEEL COMPANY
 YOUNGSTOWN OHIO

B-42
APRIL-1929

1-E-272-A STEEL SHOULDER SCREW AND
20-18 HEX NUT WITH MALLEABLE HANDLE

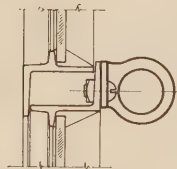


1-E-314-A BRONZE SHOULDER SCREW
AND 20-18 HEX NUT WITH BRONZE HANDLE

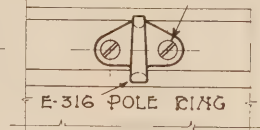


• CAM-HANDLE

VENTILATORS PROJECTED OUT
BRONZE STANDARD FOR ARCHITECTURAL TYPE
MALLEABLE IRON STANDARD FOR COMMERCIAL TYPE

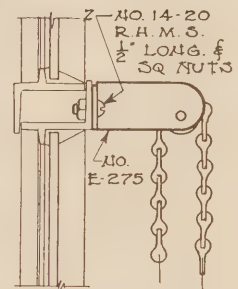


2-14-20 x 1/2" R.H.M.S. & NUTS



- POLE HOOK RING -

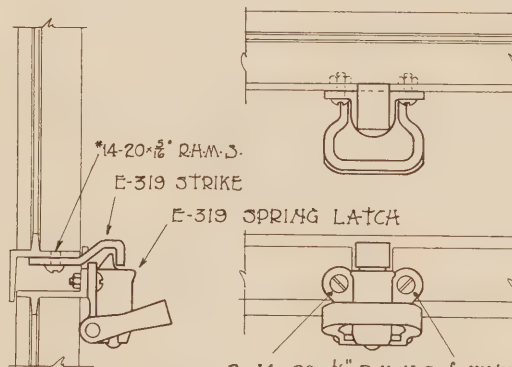
ATTACHED AT HEAD OF PROJECTED OUT VENTILATOR
BRONZE STANDARD FOR ARCHITECTURAL TYPE
MALLEABLE IRON STANDARD FOR COMMERCIAL TYPE E-275.



ROLLER BRACKET

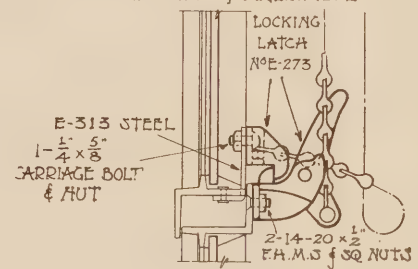
2" BRACKET USED ONLY WITH
AUTOMATIC LOCKING LATCH
SHOWN BELOW.

BRONZE & MALLEABLE



• SPRING LATCH •

BRONZE STANDARD FOR ARCHITECTURAL TYPE
MALLEABLE IRON STANDARD FOR COMMERCIAL TYPE



AUTOMATIC
LOCKING LATCH.

USED WITH PROJECTED
VENTILATORS OPENING
OUT AND NOT WITHIN
REACH OF FLOOR.

BRONZE OR MALLEABLE

SCALE 3"=1'-0"

TRUSCON
STEEL WINDOWS

- DETAILS OF STANDARD ORNAMENTAL HARDWARE -
TRUSCON PROJECTED WINDOWS

TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

B-30

DEC-1928

TRUSCON STANDARD STEEL CASEMENTS

MODEL No. 5

SPECIFICATIONS

General

- 1 All window openings shown on drawings unless otherwise specified shall be fitted with a standard type of casement as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution will be permitted without the written consent and approval of the architect.

Scope of Work

- 2 This contractor shall include in his work the furnishing of all steel casements complete, the adjusting after erection and before glazing, and the attaching of hardware as called for on drawings and covered in this specification.

Work and Material not included

- 3 Glass, putty, glazing, field painting, caulking and painting after erection, insect screens or any preparation for same.

Material

- 4 Truscon specification, low carbon new billet hot rolled steel, shall be used in manufacture of all members.

Construction

- 5 (A) All casements and standard combinations shall be manufactured in complete units at factory. The nominal glass size shall be 8" x 12".
- (B) All frames, and stiles and rail members of swing leaves, shall be Zee bars. All corners to be mitered and electrically butt welded. Exposed faces at welds to be ground smooth.
- (C) All muntins shall be Tee bars with a $\frac{5}{8}$ " face and a depth of $\frac{1}{8}$ ", and shall be continuous between rails and stiles. At intersections there shall be a mechanical joint rigidly interlocking the muntins flush with face, inside and out.

Joints of muntins with frames, stiles and rails shall be tenoned, mortised, and air hammer riveted. Horizontal muntins shall be punched for glazing clips (*see note*).

- (D) All side hinged leaves shall open outwardly and be equipped with heavy extension (cleaning) hinges that are securely riveted to rails and electrically welded or riveted to frames.

NOTES:—Muntin bars may be omitted for use of leaded glass of any pattern, or for single lights of polished plate or other kinds of glass. Glazing clips and mastic (1 lb. to 10 lin. ft.) are furnished and shipped with casements without additional charge.

Cam locking handles can be supplied in bronze, polished or oxidized finish, at an additional cost. Architect to specify type and finish. Sill rails are drilled to accommodate standard adjuster and operators of various types if required, in addition to friction hinge.

- (E) Hinges shall be of the special Truscon friction type, designed to rigidly hold window open in any desired position.
- (F) Windows shall be hinged to swing right or left as indicated. Continuous double contact weathering between swing leaves and frame shall be provided.
- (G) Where combinations of standard units are required for any single opening, vertical and horizontal mullions shall be used to join them.
- (H) A continuous drip strip (flashing) shall be provided on transom bars of all standard swing leaf combinations.

Hardware

- 6 (A) All hardware shall be shipped unattached and packed separately to prevent damage and shall be applied after erection and painting.
- (B) The cam acting locking handle shall be of standard design furnished in malleable iron (black finish) and shall be attached to swing leaves (side hinged). Provide notch at head of handle to allow restricted ventilation. Beveled brass strike plate shall be attached to frame (*see note*).
- (C) Standard push bars shall be furnished for all top hung transom units.

Painting

- 7 Casements shall be given one dip coat of steel grey mineral paint at factory before shipment.

Glazing

- 8 All casements shall be glazed on the outside. Glass shall be held in place by Truscon copper clad, spring steel wire glazing clips. All glass shall be bed and face puttied with Truscon special metal window putty.

Erection

- 9 (A) Each unit must be set plumb and true, aligned after installation and adjusted before glazing.
- (B) Mastic in sufficient quantity shall be used in setting and bedding frames where they come in contact with mullions or wall construction (*see note*).

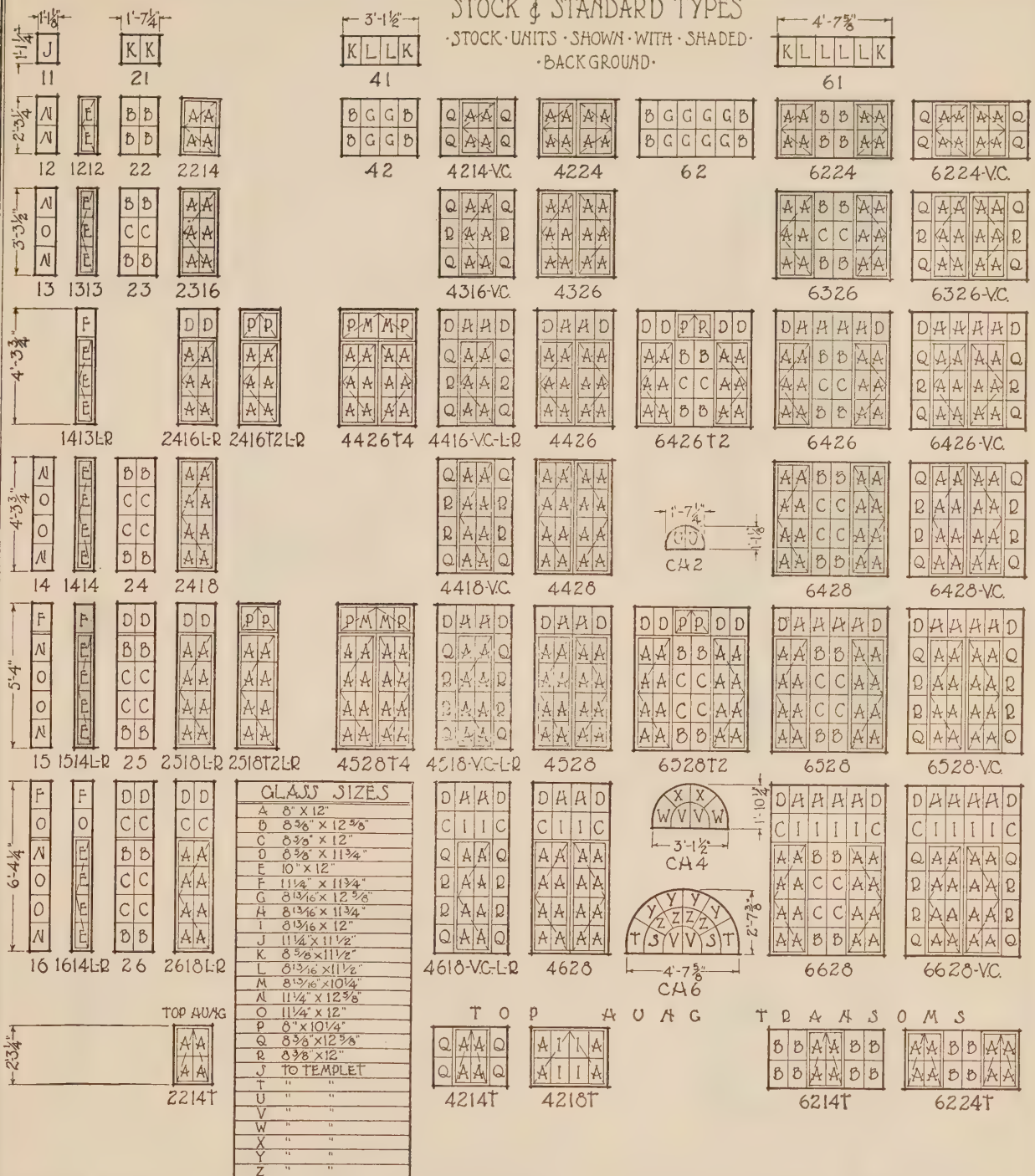
(Where so desired, the Erection Division of Truscon Steel Company will contract for the erection and adjusting of all casements in prepared openings.)

These Specifications cover the following Drafting Room Standards:

C-21 (page 35)	C-25 (page 40)
C-22 (page 36)	C-26 (page 41)
C-22A (page 37)	C-27 (page 42)
C-23 (page 38)	C-28 (page 43)
C-24 (page 39)	C-29 (page 44)
C-30 (page 45)	

STOCK & STANDARD TYPES

• STOCK • UNITS • SHOWN • WITH • SHADED •
• BACKGROUND •



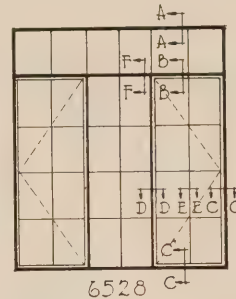
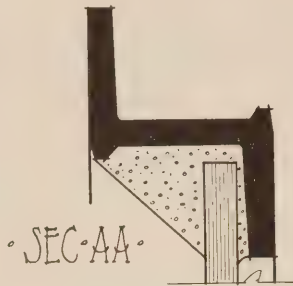
• HANDING OF CASEMENTS IS DETERMINED BY THE HINGED LOCATION VIEWED FROM OUTSIDE...HINGED AT LEFT IS A LEFT HAND CASEMENT...
• UNITS CAN BE USED FOR LEFT OR RIGHT HAND SWING EXCEPT UNITS WITH TRANSOM OR MARKED L-R ... ALL VENTS SWING OUT...

TRUSCON
STEEL WINDOWS

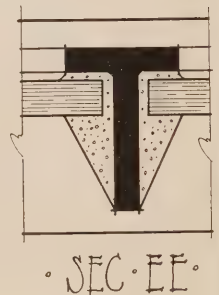
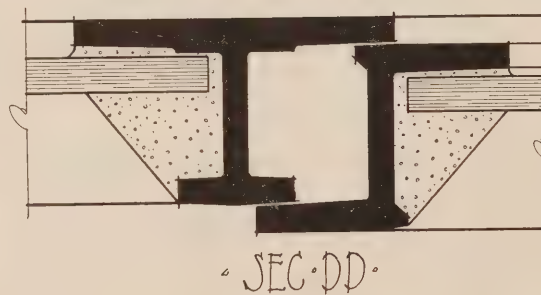
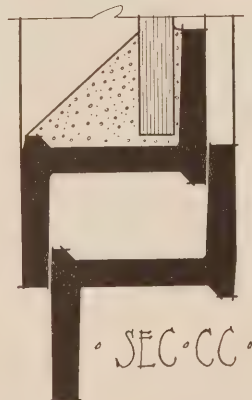
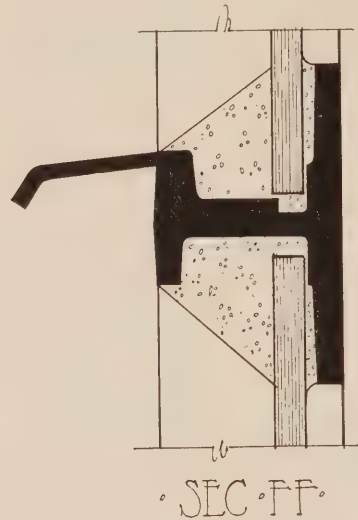
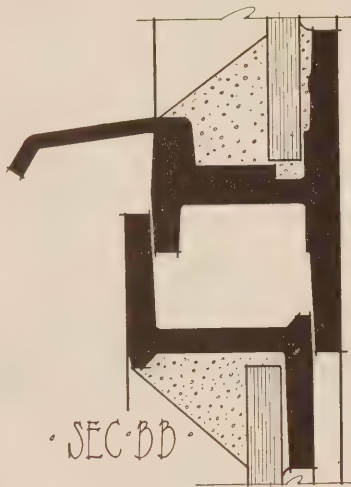
• MODEL • No 5 •
TRUSCON STANDARD CASEMENTS
TRUSCON • STEEL • COMPANY •

C-21
APRIL-1929

Specifications on page 34



ELEVATION OF TYPICAL UNIT



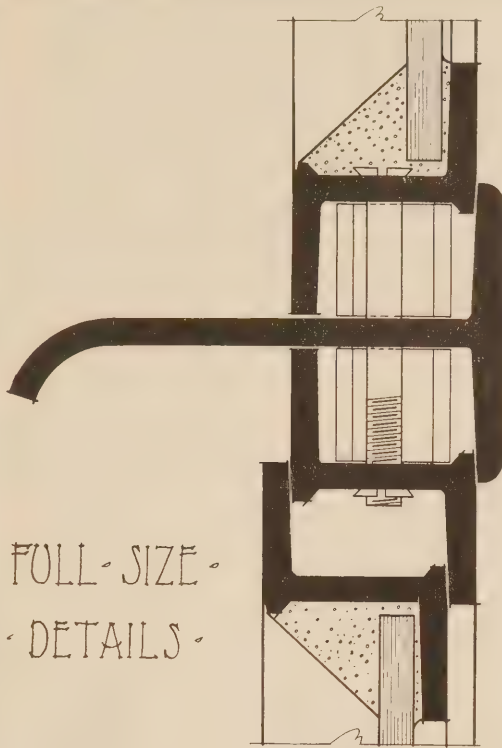
· FULL · SIZE · DETAILS ·

TRUSCON
STEEL WINDOWS

· MODEL · H^o 5 ·
TRUSCON · STANDARD · CASEMENTS ·
· TRUSCON · STEEL · COMPANY ·
· YOUNGSTOWN · OHIO ·

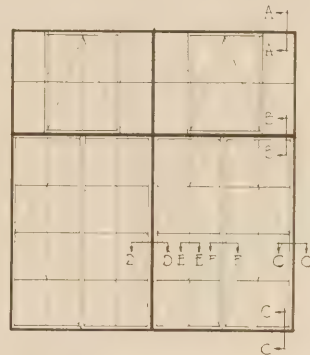
C-22
JULY-1928

Specifications on page 34



FULL-SIZE
DETAILS

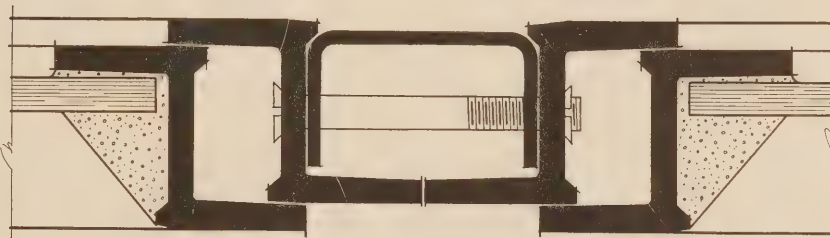
SEC. BB.



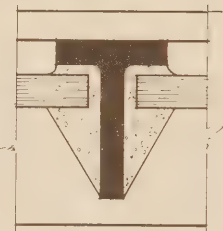
ELEVATION OF COMBINING 4 UNITS



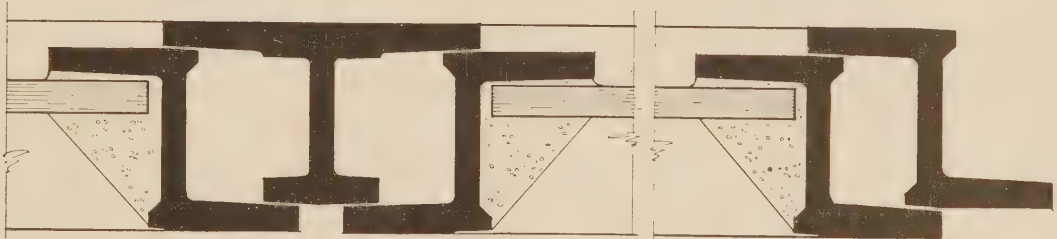
SEC. AA.



SEC. DD.



SEC. EE.



SEC. FF.

SEC. CC.

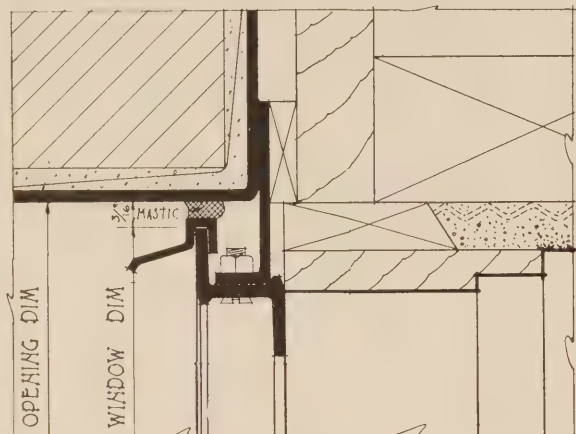
TRUSCON
STEEL WINDOWS

MODEL NO. 5
TRUSCON STANDARD CASEMENTS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

C-22A
DEC-1928

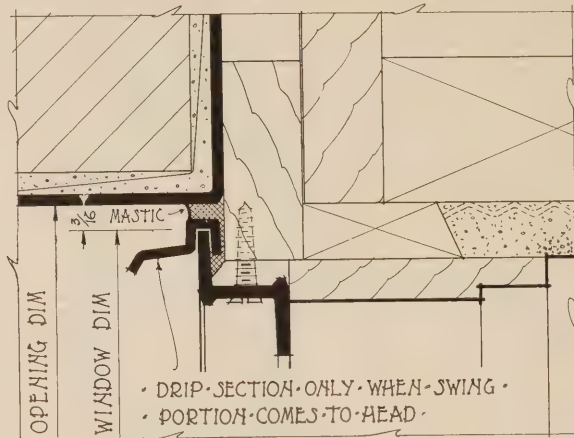
Specifications on page 34

BRICK VENEER - DIRECT IN MASONRY -



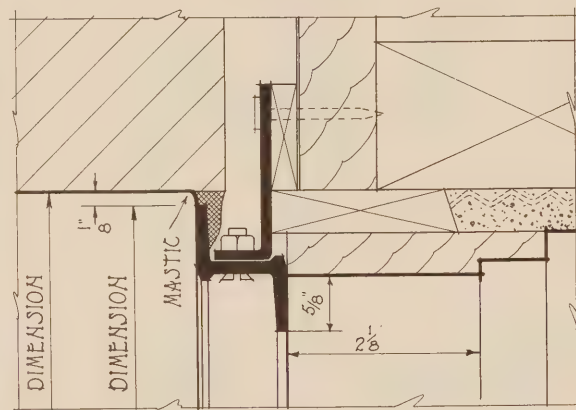
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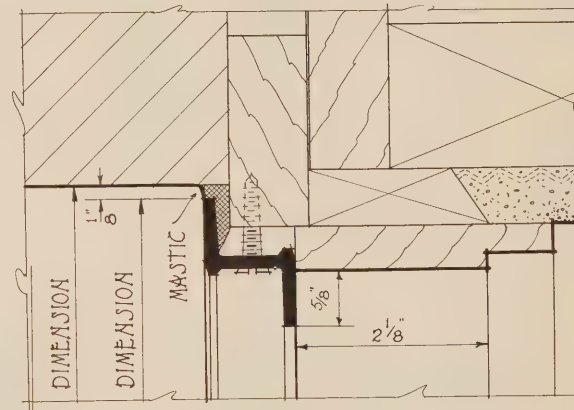


• DRIP SECTION ONLY • WHEN SWING •
• PORTION COMES TO HEAD •

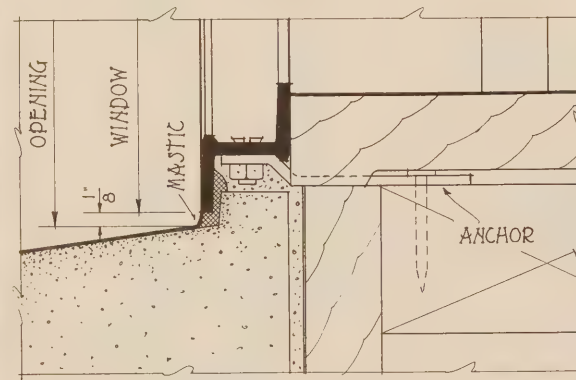
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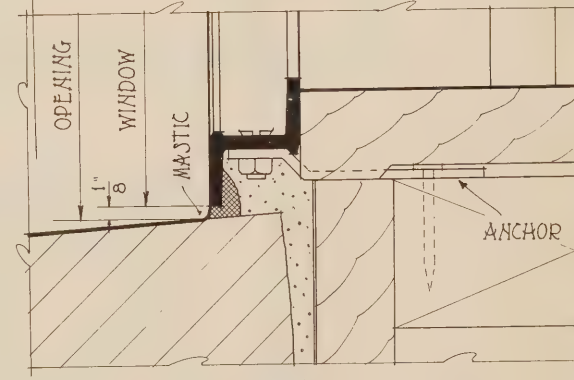
JAMB



JAMB



SILL



SILL

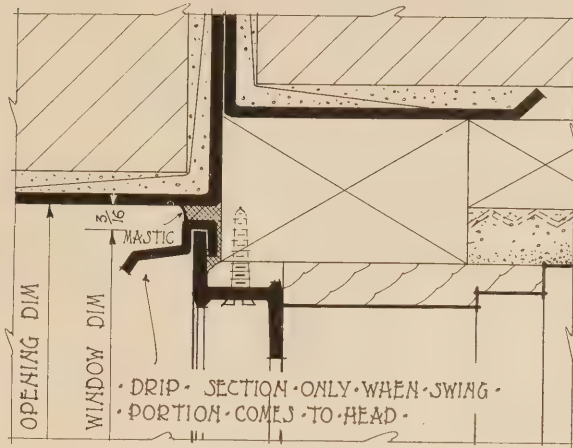
DETAILS - HALF SIZE

TRUSCON
STEEL WINDOWS

MODEL - N° 5
TRUSCON STANDARD CASEMENTS
TRUSCON STEEL COMPANY • YOUNGSTOWN • OHIO •

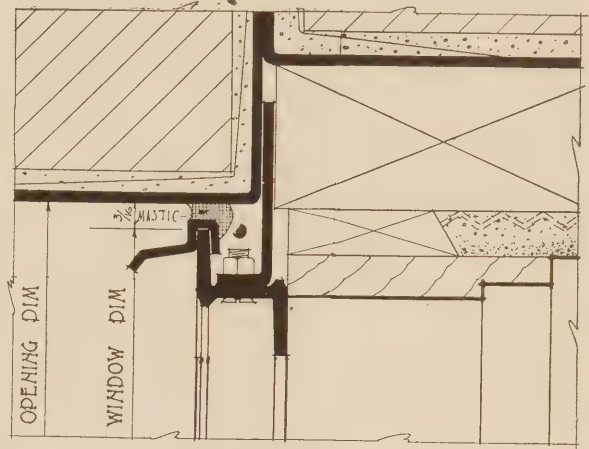
C-23
DEC-1928

SOLID BRICK · WOOD FRAME ·

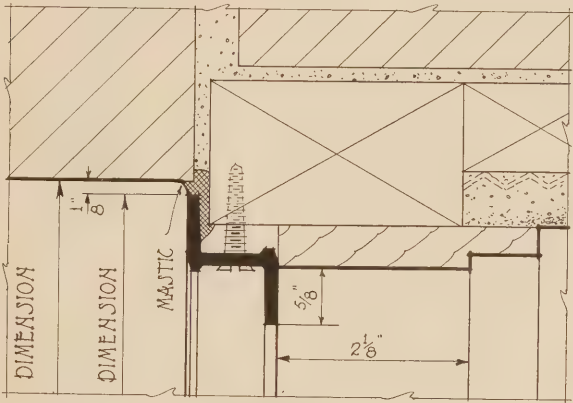


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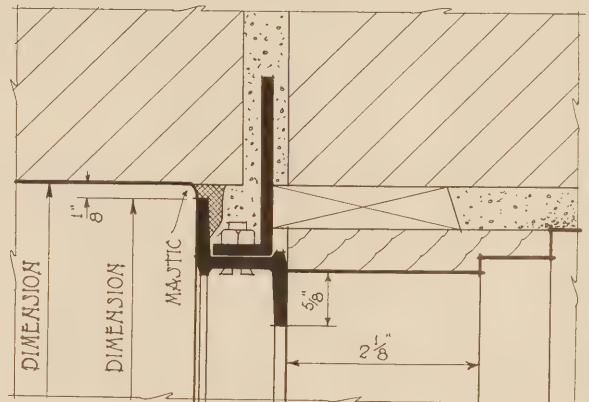
SOLID BRICK · DIRECT IN MASONRY ·



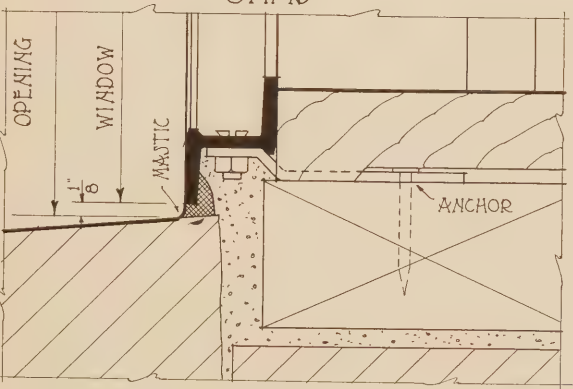
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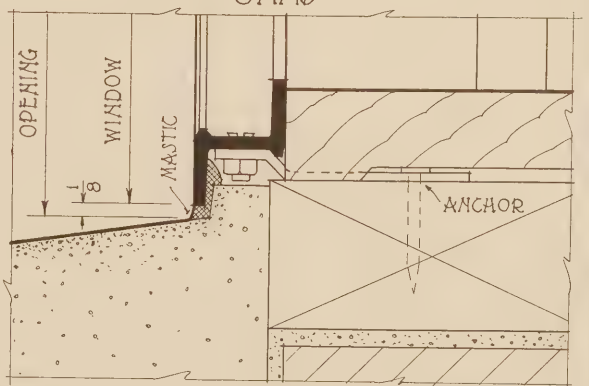
JAMB



JAMB



SILL



SILL

· DETAILS · HALF · SIZE ·

· MODEL · NO 5 ·

TRUSCON
STEEL WINDOWS

TRUSCON · STANDARD · CASEMENTS ·

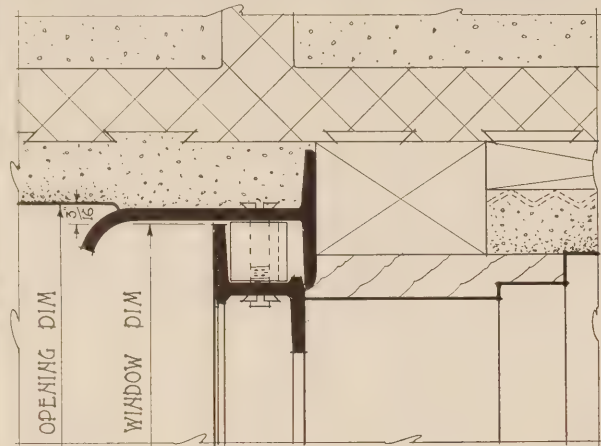
· TRUSCON · STEEL · COMPANY ·

· YOUNGSTOWN · OHIO ·

C-24

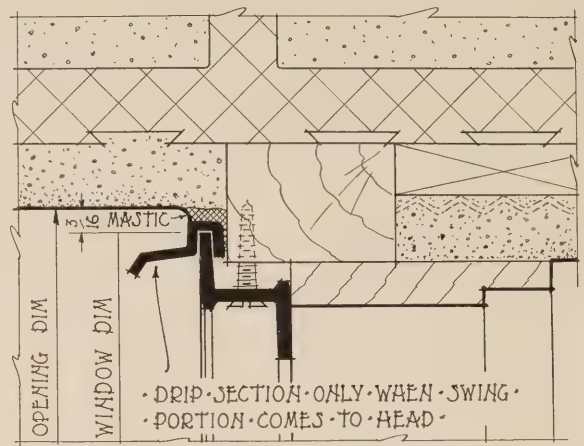
DEC-1928

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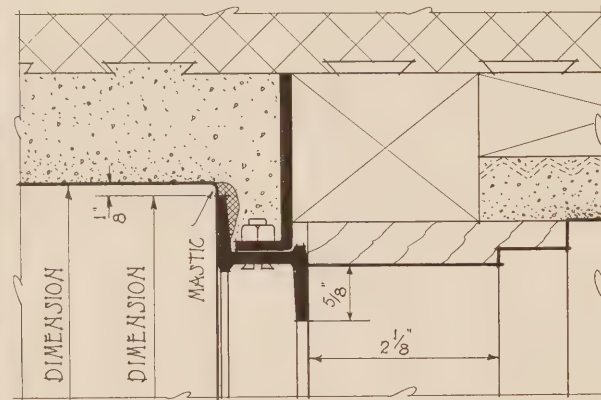


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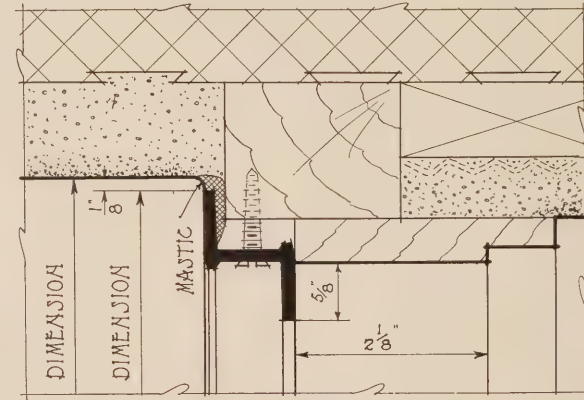
HOLLOW TILE WOOD BUCK



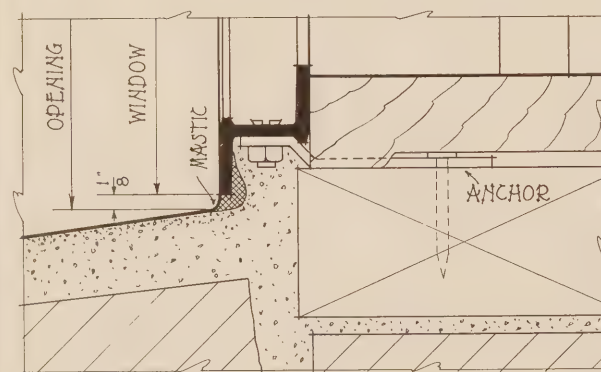
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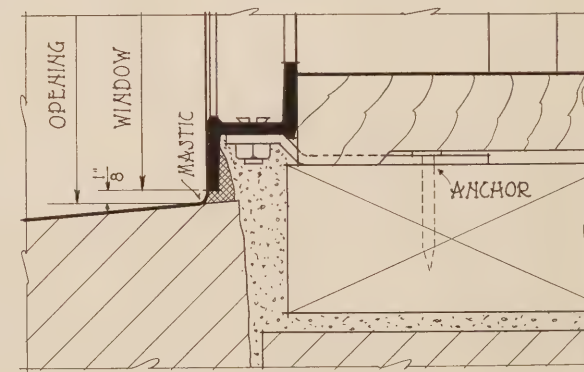
JAMB



JAMB



SILL



SILL

DETAILS HALF SIZE

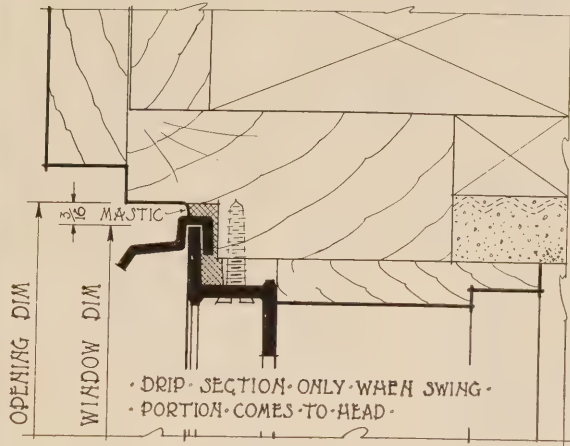
TRUSCON
STEEL WINDOWS

MODEL NO 5
TRUSCON STANDARD CASEMENTS
TRUSCON STEEL COMPANY

YOUNGSTOWN OHIO

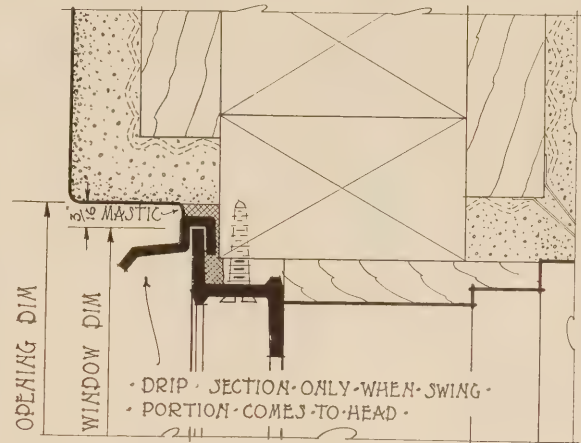
C-25
JULY-1928

• FRAME CONSTRUCTION •

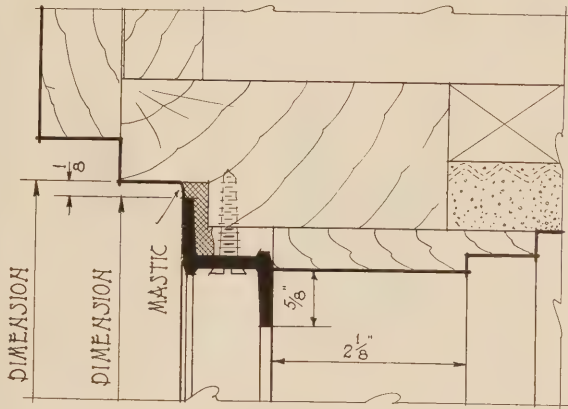


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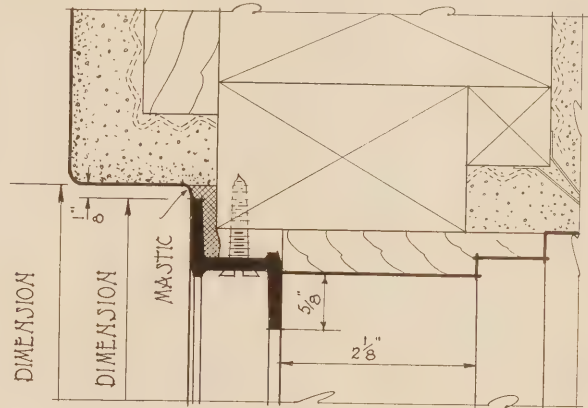
• STUCCO CONSTRUCTION •



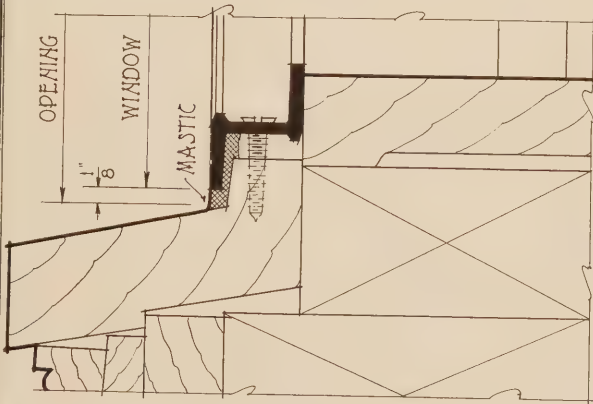
• HEAD •



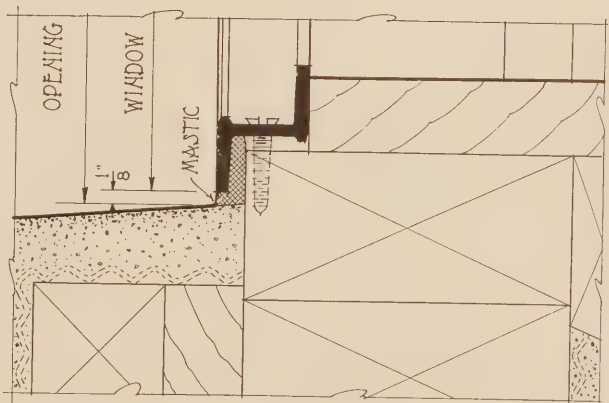
• JAMB •



• JAMB •



• SILL •



• SILL •

• DETAILS - HALF SIZE •

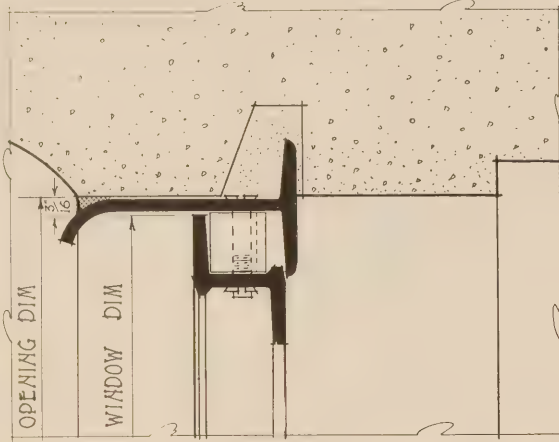
TRUSCON
STEEL WINDOWS

• MODEL - No 5 •
TRUSCON STANDARD CASEMENTS
• TRUSCON STEEL COMPANY •

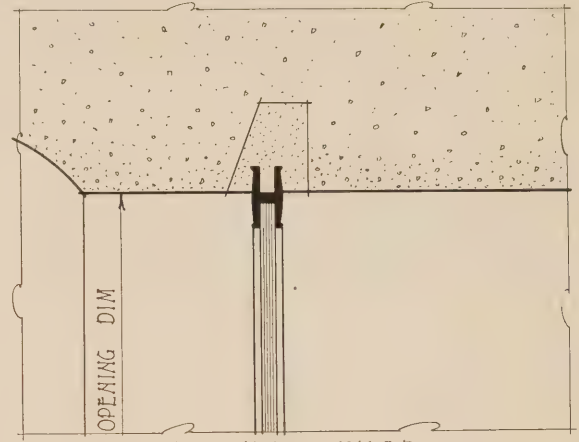
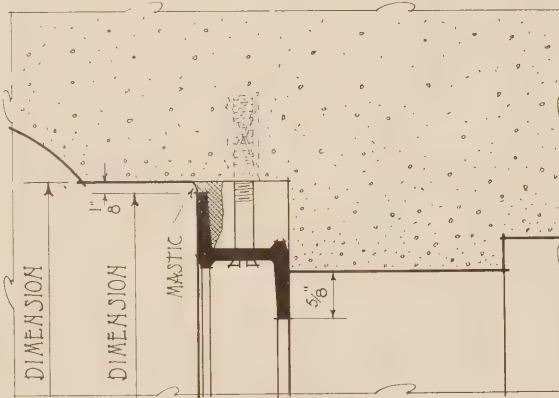
• YOUNGSTOWN - OHIO •

C-26
JULY-1928

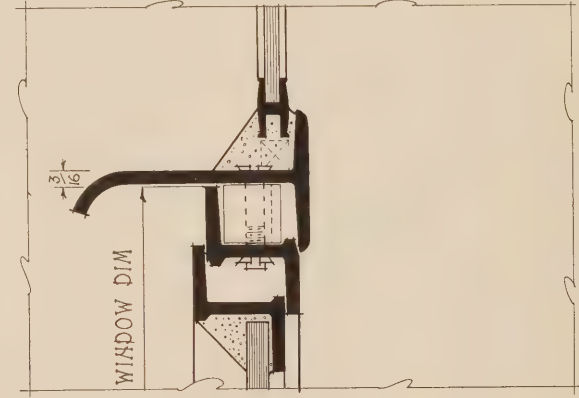
STONE CONSTRUCTION



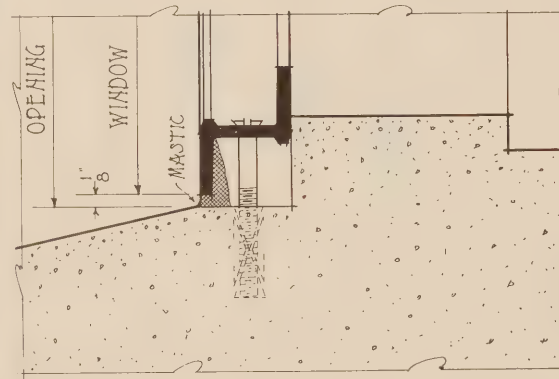
HEAD

TRACERY HEAD
LEADED GLASS

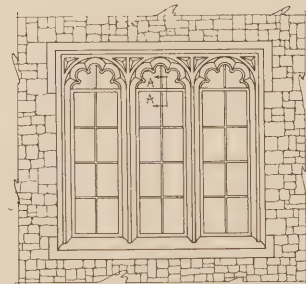
JAMB



SECTION AA



SILL

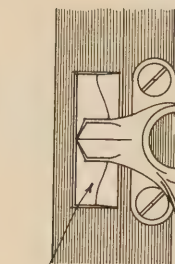


TYPICAL ELEVATION

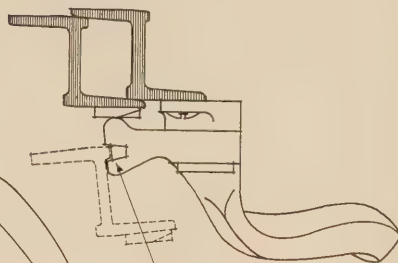
DETAILS - HALF SIZE

TRUSCON
STEEL WINDOWSMODEL - No 5
TRUSCON - STANDARD - CASEMENTS
TRUSCON - STEEL COMPANY - YOUNGSTOWN - OHIOC-27
JULY-1928

• STANDARD CASEMENT HARDWARE •



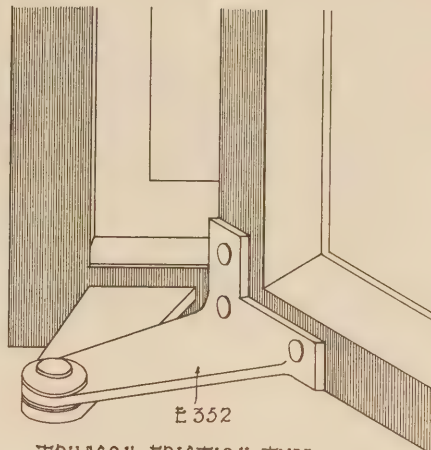
E-312A
STRIKE



E-355

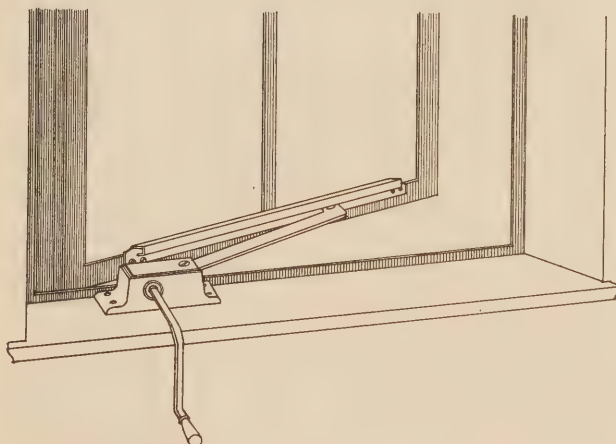
NOTCHED TO GIVE
MINIMUM VENTILATION

• CAM ACTION •
• LOCKING HANDLE •

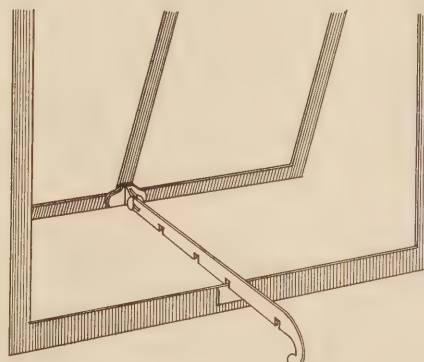


E-352

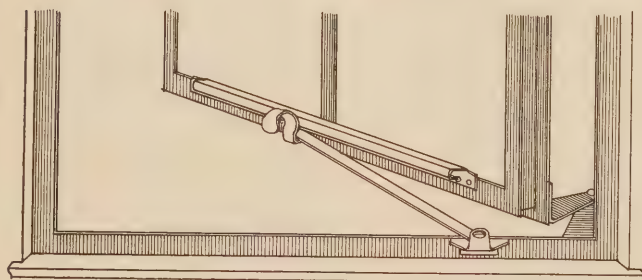
• TRUSCON FRICTION-TYPE •
• EXTENDED HINGE •



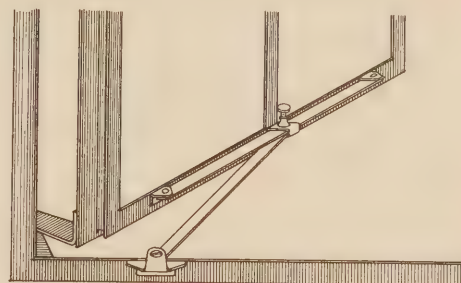
• GEARED UNDERSCREEN ADJUSTER - N° 25 •



• TRANSOM STAY BAR ADJUSTER - E-357



• AUTOMATIC SLIDING ADJUSTER - N° 61 •



• SLIDING THUMB SCREW ADJUSTER - N° 30 •

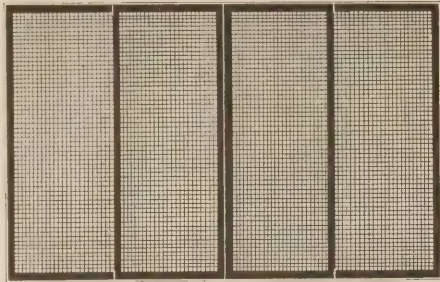
TRUSCON
STEEL WINDOWS

• HARDWARE MODEL N° 5 •
TRUSCON STANDARD CASEMENTS
• TRUSCON STEEL COMPANY •

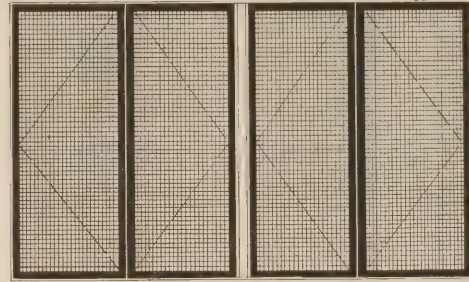
• YOUNGSTOWN, OHIO •

C-28
JULY-1928

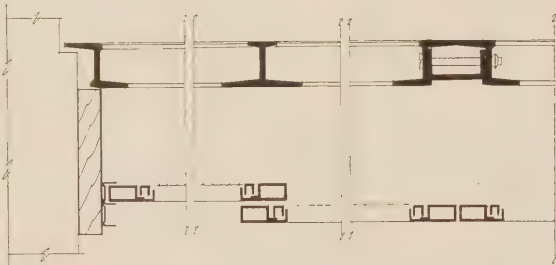
• SCREENS • NOT • FURNISHED • BY • TRUSCON • STEEL • COMPANY •



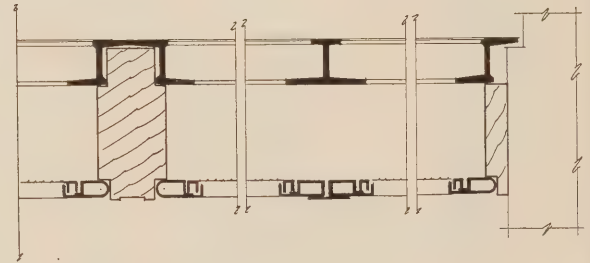
• HORIZONTAL • SLIDING • SCREEN •



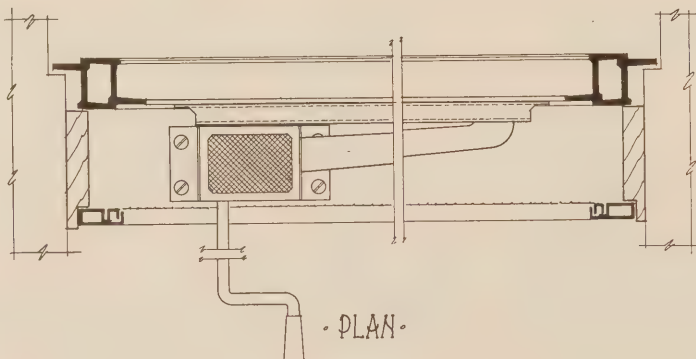
• SWING • TYPE • SCREEN •



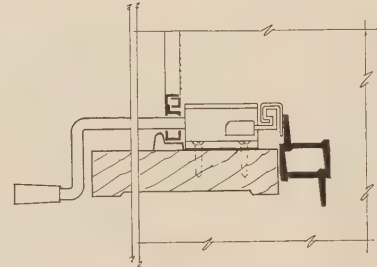
• SECTION • OF • HORIZONTAL • SLIDING • SCREEN •



• SECTION • OF • SWING • TYPE • SCREEN •



• PLAN •



• SECTION •

• GEARED • TYPE • UNDERSCREEN • OPERATOR •

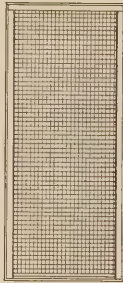
TRUSCON
STEEL WINDOWS

• SCREEN • DETAILS • MODEL • N°5 •
TRUSCON STANDARD CASEMENTS
• TRUSCON • STEEL • COMPANY •

• YOUNGSTOWN • OHIO •

C-29
JULY-1928

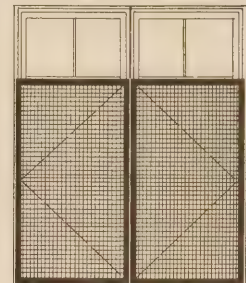
• SCREENS NOT FURNISHED BY TRUSCON STEEL COMPANY •



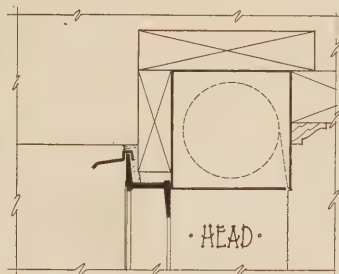
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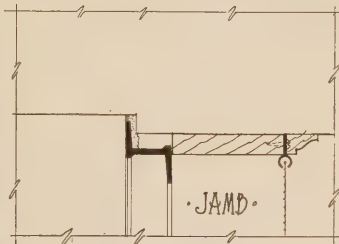
• HORIZONTALLY SLIDING SCREENS •



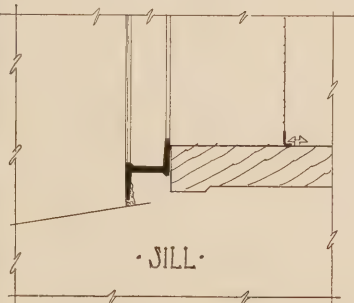
• SWING-TYPE SCREENS •



• HEAD •

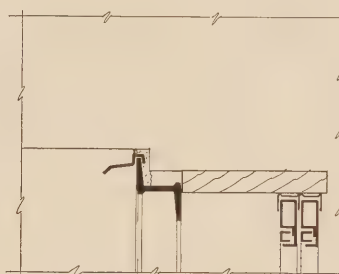


• JAMB •

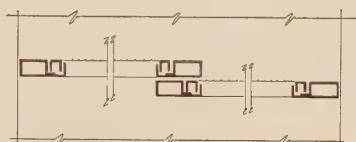


• SILL •

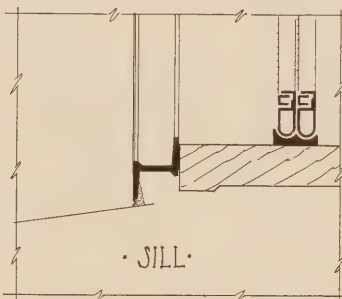
• SECTION SHOWING
• INSTALLATION OF
ROLL-TYPE SCREEN •



• HEAD & JAMB •

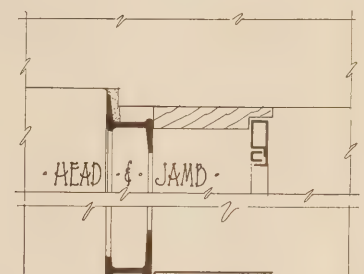


• HORIZONTAL SECTION •



• SILL •

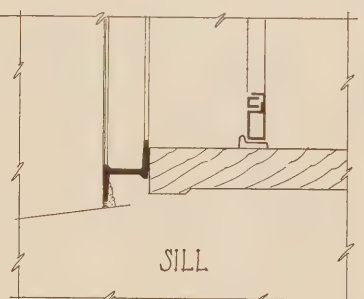
• SECTION SHOWING
• INSTALLATION OF
HORIZONTALLY SLIDING SCREENS •



• HEAD & JAMB •



• HORIZONTAL SECTION •



SILL

• SECTION SHOWING
• INSTALLATION OF
SWING-TYPE SCREENS •

TRUSCON
STEEL WINDOWS

• SCREEN DETAILS • MODEL N° 5 •
TRUSCON STANDARD CASEMENTS
TRUSCON • STEEL • COMPANY •

• YOUNGSTOWN • OHIO •

C-30
JULY-1928

Specifications on page 34

DOUBLE STEEL CASEMENT WITHOUT MULLION

MODEL No. 5

SUITABLE FOR FIRE EXITS

SPECIFICATIONS

General

- 1 All openings shown on the drawings as Fire Exits shall be fitted with a standard type of Double Mullionless Casements as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution will be permitted without the written consent and approval of the architect.

Scope of Work

- 2 This contractor shall include in his work the furnishing and installation of all Double Mullionless Casements complete, including attaching of hardware and supplying glazing clips as called for on drawings and covered in this specification.

Work Not Included

- 3 Glass, glazing, painting, caulking and painting after erection. Insect screens or any preparation for same.

Material

- 4 Truscon specification new billet hot-rolled steel shall be used in the manufacture of all members.

Construction

- 5 The intersection of the horizontal and vertical muntins shall have a mechanical joint, rigidly interlocking the bars, and in addition the muntins must be continuous from head to sill and from jamb to jamb. The surface of the joints must be flush with the face of the muntin bars on both the inside and the outside. Horizontal and vertical muntin bars to be of the same size and section. The connections of all muntin bars to sash rails are to be tenoned and air hammer-riveted into countersunk, mortised holes, making a flush surface on outside. All corners of sash and frame are mitred and electrically butt welded. All sash and frames shall be not less than 1" deep.

- 6 No center mullion. Left hand leaf to be closed and held shut by astragal plates on right hand casement leaf. Top and bottom bolt are attached to right hand leaf to lock both leaves.

Hardware

- 7 The leaves shall swing outwardly and shall be hung on heavy extension flat friction type hinges bolted to sash and welded to the frame giving additional reinforcing to the corners of frame. Astragal plates are attached to the leaves so as to hold the left hand leaf in a closed position and form a two point contact weathering. Dummy handle is placed on the left hand leaf for opening and closing.

Painting

- 8 Double Mullionless Casements shall be given one dip coat of English oxide of iron and oil paint (grey in color) in factory, before shipment.

(For paint specifications see plate S-1 page 134).

Glazing

- 9 All Double Mullionless Casements shall be glazed on the outside.
- 10 Glass shall be held in place by Truscon copper-clad spring steel wire glazing clips. All glass must be bed and face puttied with Truscon Special metal putty.

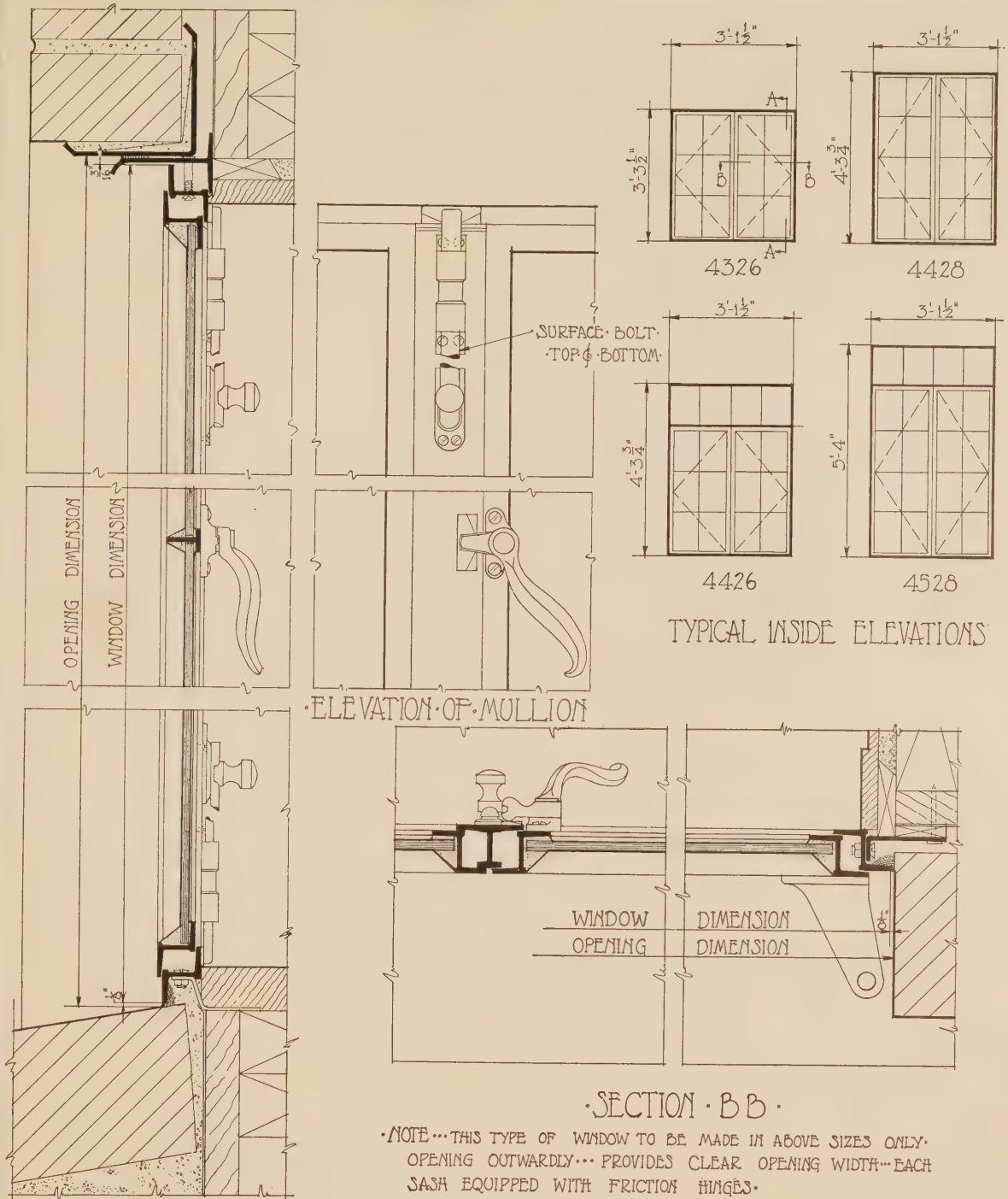
(For putty specifications see plate S-1 page 134).

Erection

- 11 All Double Mullionless Casement windows must be tested for alignment before installation and must be held in place during construction by means of wooden wedges so located as not to distort or bulge the sash or frame in any way and set plumb, level, true and out of wind.

**These Specifications cover
Drafting Room Standard**

C-31 (page 47)



SECTION AA

ELEVATION OF MULLION

SECTION BB

NOTE...THIS TYPE OF WINDOW TO BE MADE IN ABOVE SIZES ONLY.
OPENING OUTWARDLY... PROVIDES CLEAR OPENING WIDTH... EACH
SASH EQUIPPED WITH FRICTION HINGES.

DOUBLE CASEMENT WITHOUT STATIONARY MULLION

TRUSCON
STEEL WINDOWS

MODEL NO 5
TRUSCON STANDARD CASEMENTS
TRUSCON STEEL COMPANY
YOUNGSTOWN OHIO

C-31
JULY-1928

Specifications on page 46

TRUSCON STEEL CASEMENT DOORS

MODEL No. 5

SPECIAL FEATURES

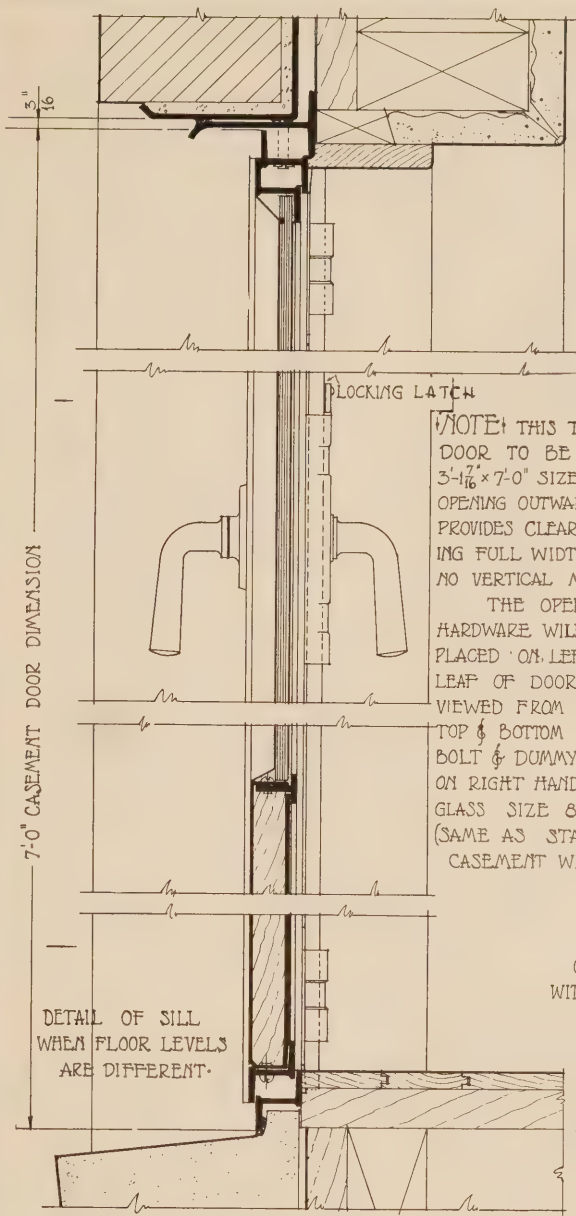
THE development of Truscon Casement Doors (shown on Plates C-32 and C-33) is the result of a consistent demand from many sources for a casement door that may be used, in conjunction with Truscon Standard Casement units, for either exterior or interior installations.

The design of Truscon Casement Doors, being based upon the same glass sizes as Casement Windows, permits of a wide range in the use of Standard Steel Casement Units, as sidelights, transoms or curved heads in connection with Casement Doors.

Truscon Casement Doors are appropriate as connecting doors, between living rooms, breakfast rooms, solariums and conservatories or as openings to balconies, terraces and gardens.

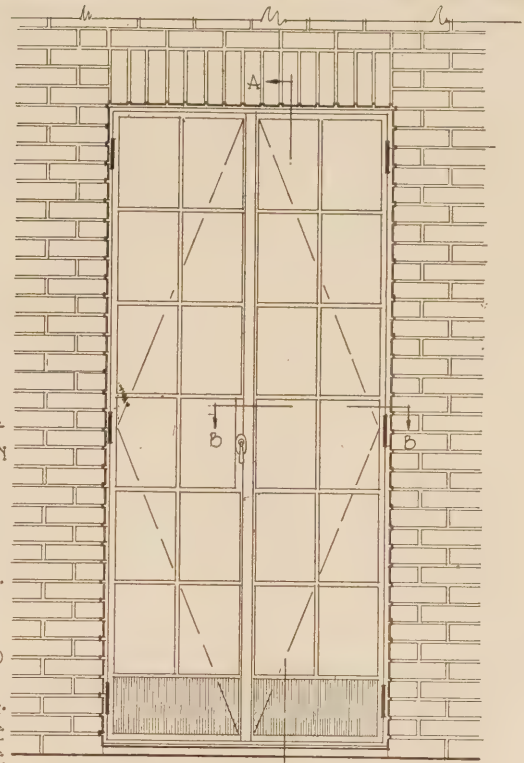
Truscon Casement Doors are not recommended for Entrance Doors, as provision for locking is placed on inside only.

Truscon Casement Doors are manufactured with the same care and precision as Truscon Standard Steel Casements and give excellent results for any of the usages mentioned above.



NOTE: THIS TYPE OF DOOR TO BE MADE IN 3'-1 $\frac{1}{16}$ ' \times 7'-0" SIZE ONLY OPENING OUTWARDLY. PROVIDES CLEAR OPENING FULL WIDTH. NO VERTICAL MULLION.

THE OPERATING HARDWARE WILL BE PLACED ON LEFT HAND LEAF OF DOOR ONLY VIEWED FROM OUTSIDE. TOP & BOTTOM SURFACE BOLT & DUMMY HANDLE ON RIGHT HAND LEAF. GLASS SIZE 8' \times 12'. (SAME AS STANDARD CASEMENT WINDOW)



EXTERIOR ELEVATION

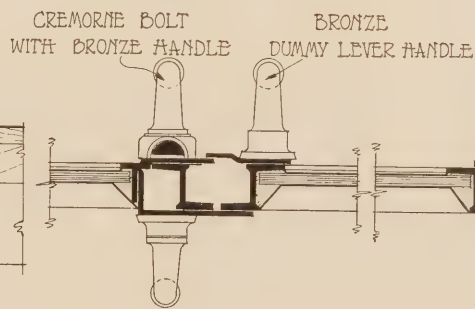
DETAIL OF SILL WHEN FLOOR LEVELS ARE DIFFERENT.

SECTION A-A

DETAIL OF SILL WHEN FLOOR LEVELS ARE THE SAME.



ALTERNATE SILL SECTION



SECTION B-B

SCALE 3"=1'-0"

TRUSCON
STEEL WINDOWS

STANDARD
TRUSCON CASEMENT DOOR

TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

C 32
DEC-1928

Specifications on page 50

TRUSCON STEEL CASEMENT DOORS

MODEL No. 5

SPECIFICATIONS

General

- 1 All openings shown on the drawings as Steel Casement Doors shall be fitted with standard type of Casement door as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution will be permitted without the written consent and approval of the architect.

Scope of Work

- 2 This contractor shall include in his work the furnishing and installation of all Steel Casement Doors complete including attaching of hardware and supplying glazing clips as called for on drawing and covered in this specification.

Work Not Included

- 3 Glass, glazing, painting, caulking and painting after erection, insect screens or any preparation for same.

Material

- 4 Truscon specification, new billet, hot-rolled steel shall be used in the manufacture of all members.

Construction

- 5 The intersection of the horizontal and vertical muntins shall have a mechanical joint, rigidly interlocking the bars and in addition the muntins must be continuous from head to sill and from jamb to jamb. The surface of the joints must be flush with the face of the muntin bars on both the inside and the outside. Horizontal and vertical muntin bars to be of the same size and section. The connections of all muntin bars to sash rails are to be tenoned and air-hammer riveted into countersunk mortise holes, making a flush surface on outside. All corners of sash and frame mitred and electrically welded. All sash and frame rails to be not less than 1" deep.

- 6 The standard opening for Truscon Casement Doors is 3' 1½" x 7'-0" out to out. The doors are 6 lights high and 2 lights wide; with a steel kickplate at the bottom on the outside of door, and a steel reinforcing panel on the inside of door welded to insure stiffness.

- 7 All doors are to have two-point contact weathering throughout.

- 8 The design, size and equipment of Casement Doors cannot be varied in any respect.

Hardware

- 9 All Casement Doors shall open outwardly and shall be hung on heavy pressed steel hinges with ⅝" brass pins and securely welded to frame. The doors shall be equipped with a cremone bolt on one leaf and a dummy lever handle on the other with top and bottom bolts. Casement Doors cannot be provided with keyed lock.

Painting

- 10 All Casement Doors shall be given one dip coat of English oxide of iron and oil paint (gray in color) in factory before shipment.

(For paint specifications see plate S-1 page 134)

Glazing

- 11 All Casement Doors shall be glazed on the outside.
- 12 Glass shall be held in place by Truscon copper-clad special steel wire glazing clips. All glass must be bed and face puttied with Truscon special metal Casement putty.

(For putty specifications see plate S-1 page 134)

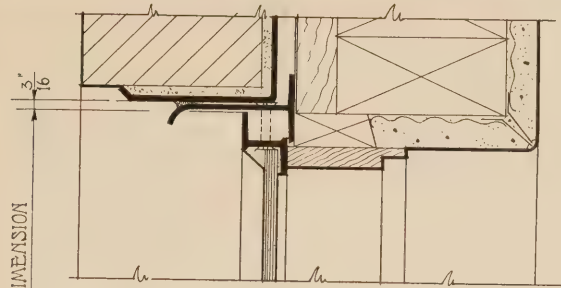
Erection

- 13 All Casement Doors must be aligned after installation; must be set plumb and true and out of wind, properly wedged in place and carefully adjusted before glazing.

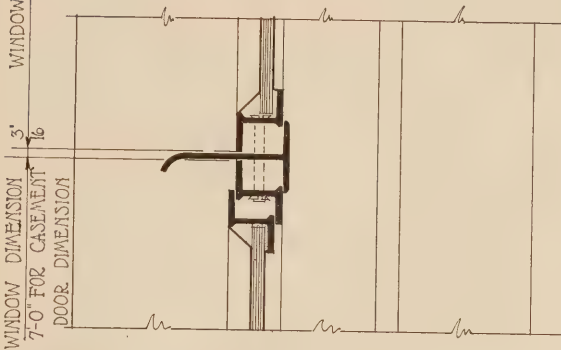
These Specifications cover Drafting Room Standards:

C-32 (page 49)

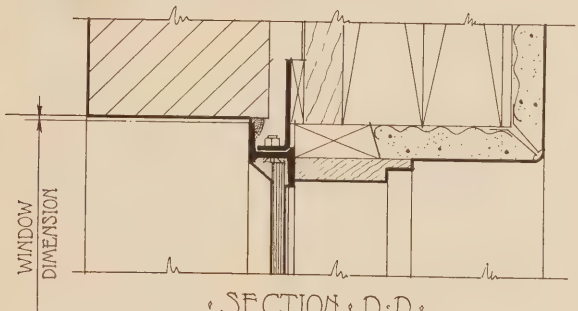
C-33 (page 51)



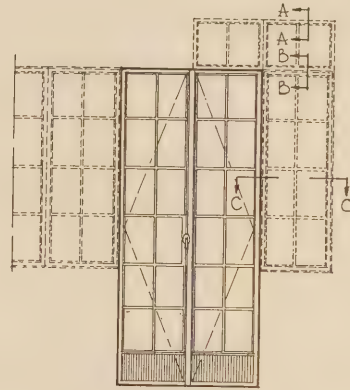
SECTION A-A



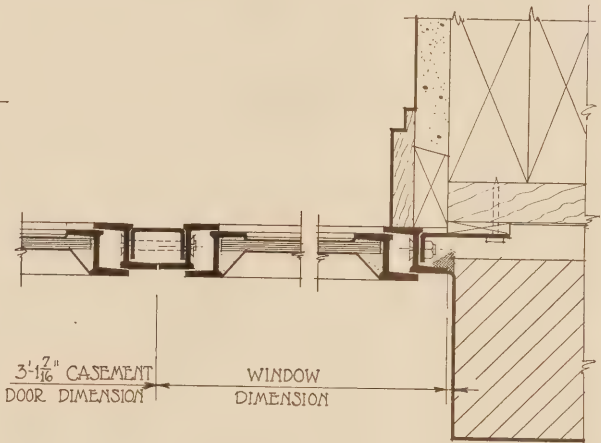
SECTION B-B



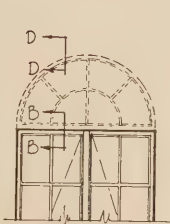
SECTION D-D



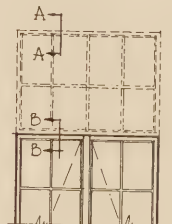
EXTERIOR ELEVATION



SECTION C-C



EXTERIOR ELEVATION



EXTERIOR ELEVATION

NOTE

FOR DETAIL OF DOORS SEE PLATE C-33.
DOTTED LINES INDICATE ADAPTABILITY
OF STANDARD CASEMENT WINDOW UNITS
WHEN USED IN CONNECTION WITH STAND-
ARD CASEMENT DOORS.

THE OPERATING HARDWARE FOR
CASEMENT DOOR WILL BE PLACED ON
LEFT HAND LEAF OF DOOR ONLY. VIEWED
FROM THE OUTSIDE.

SCALE 3"=1'-0"

TRUSCON
STEEL WINDOWS

STANDARD DOOR WITH SPECIAL FEATURES
TRUSCON CASEMENT DOOR
TRUSCON STEEL COMPANY

YOUNGSTOWN OHIO

C-33
JULY-1928

Specifications on page 50

TRUSCON BASEMENT STEEL WINDOWS

SPECIFICATIONS

General

- 1 All windows so indicated on the plans and elevations and called for in these specifications shall be Standard Steel Basement Windows as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the consent and approval of the architect.

Material

- 2 Truscon specification hot-rolled billet steel shall be used for all window members.

Construction

- 3 Jambs and head member shall be one continuous piece bent at corners. Sill corner joints shall be formed with a mortise and tenon and air hammer-riveted.
- 4 The major part of all sections shall be at least $\frac{1}{8}$ " in thickness.
- 5 The sash and frame shall be constructed to give double contact weathering at side jambs, head and sill when closed.
- 6 The sides and head of frame shall be of Zee-bar construction with a "U" shaped section welded to jambs for anchorage into the masonry. The inside and outside legs acting as positive guides for masonry construction.
- 7 The inside leg of Zee-bar frame shall bear against the masonry and act as a guide for same, providing the necessary clearance for opening and closing of window.
- 8 The bottom section shall have a $1\frac{1}{8}$ " vertical face on the exterior overlapping the masonry sill.
- 9 All frames must be provided with two holes at each side jamb for attachment of screens.

Hardware

- 10 The sash shall be hinged at the top to swing in.
- 11 The hinges are of hook type. The Keeper is solidly welded to the frame. Ventilators can be conveniently removed when opened to 90 degrees.
- 12 The catch shall be of cam acting type, of neat and efficient design, securely locking ventilator.

Painting

- 13 All windows not galvanized shall be given one shop coat of protective paint before shipment.

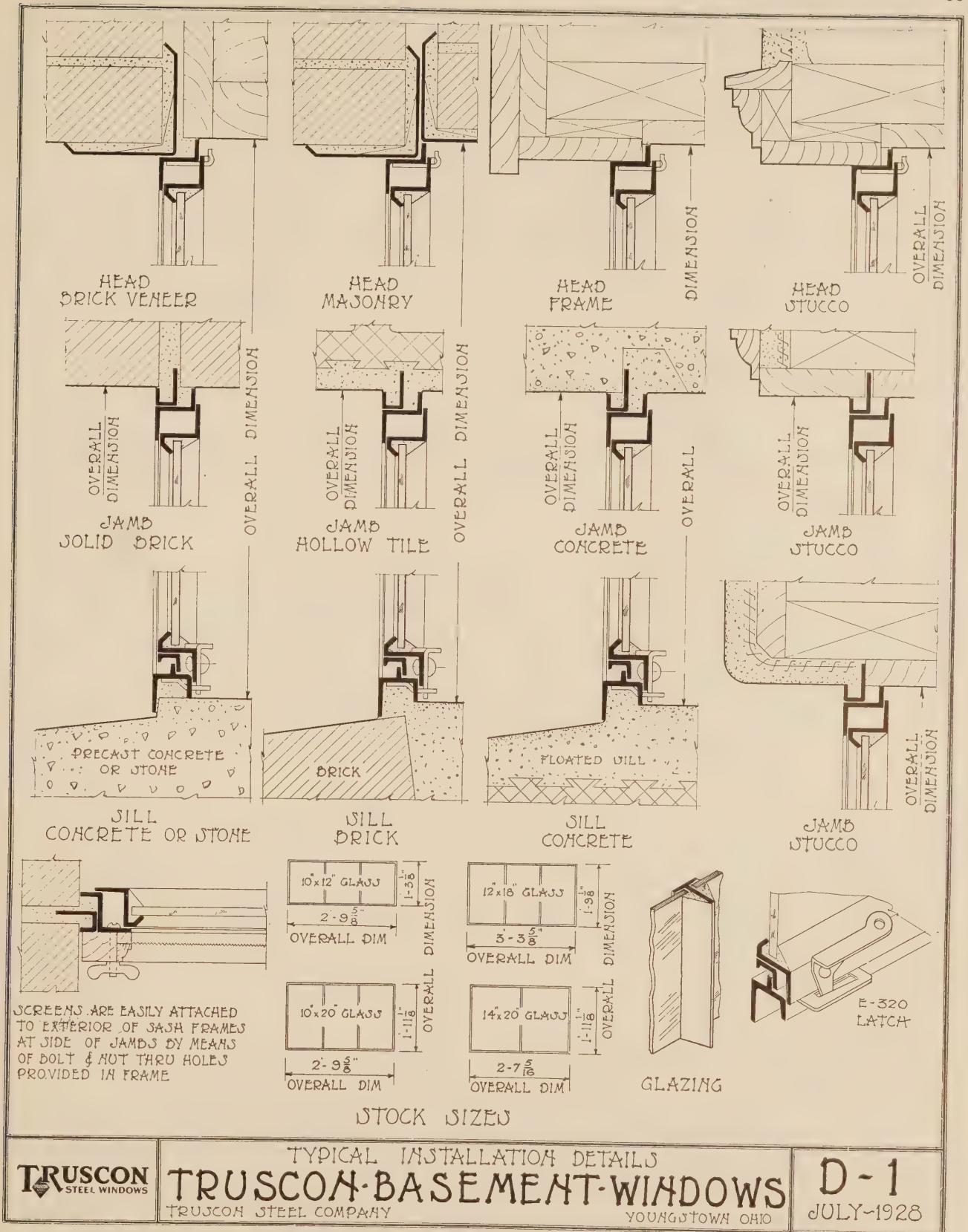
Glazing

- 14 Basement windows shall be inside glazed so that the glass will bear against the steel glazing rabbet when in an open position.
- 15 Glass shall be bed and face puttied with special metal window putty manufactured by the Truscon Laboratories, Detroit, Michigan.
(For putty specifications see plate S-1 page 134.)

Erection

- 16 Basement windows shall be trued in all directions and set plumb in the masonry.
- 17 Sash shall be adjusted in frames before glazing.
- 18 After windows are set in openings and properly built in, the joint between the frame and masonry shall be carefully pointed up by the mason contractor.

**These Specifications cover
Drafting Room Standard
D-1 (page 53)**



TRUSCON CONTINUOUS STEEL WINDOWS

TOP HUNG TYPE

SPECIFICATIONS

General

- 1 All windows so indicated on the doors and elevations and called for in the specifications shall be Continuous Windows as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the consent and approval of the architect.

Material

- 2 Truscon specification hot-rolled new billet steel shall be used for all sash members.

Construction

- 3 All sash members shall be of solid rolled sections designed to secure maximum strength without excessive weight.
- 4 Joints shall be mortise and tenon and air hammer riveted. In addition, vertical muntin bars shall be arc welded to top and bottom rails.
- 5 Sash shall be so constructed that the glass will be set in a putty bed of even thickness on all four sides.
- 6 The hinge shall be formed by bolting a continuous formed member to the structural steel. The member shall be so designed as to interlock with the channel head section of the sash unit, resulting in continuous bearing and positive weathering without the addition of built-up members or flashing. The hinge construction shall provide for expansion or contraction of the sash units. Stay clips attached at intervals to the muntins shall lock the hinge and sash members together.
- 7 Provisions shall be made for punching hinged members in the field to insure correct alignment of continuous windows, irrespective of irregularities in the structural steel construction.
- 8 The design of sill members shall be such as to provide a flange on the inside for attachment of operators, a glazing ledge and a long overlapping weathering leg. This member shall have a depth of not less than $2\frac{1}{2}$ " and a height of $3\frac{1}{2}$ ".
- 9 Muntin bars shall be constructed of not less than $1\frac{1}{4}$ " x $1\frac{1}{4}$ " T-Bar.
- 10 There shall be a fixed panel at the ends of sash runs to afford the means of attaching the sash to the building construction in a weather-tight manner. The flashing between the building and the shaft shall be furnished and installed by another contractor.
- 11 Attached to the fixed end panel and recessed from same shall be a storm panel over which the swing sash shall lap at least 24". This panel shall be arranged to drain to the outside.
- 12 When continuous windows are used in side wall construction, storm panels shall be omitted and a special channel weathering used.

Mullions

- 13 All runs of continuous windows shall be connected with a channel section mullion $2\frac{1}{2}$ " in width, so constructed as to allow an adjustment of $1\frac{1}{8}$ " for alignment of unit and to take care of the expansion and contraction.

Mechanical Operators

- 14 All runs of continuous windows, except those marked "fixed," shall be equipped with a mechanical operating device of the toggle type as manufactured by the Truscon Steel Company. Fixed runs shall be equipped with hinges for possible future operation.

Condensation Gutter

- 15 Wherever condensation gutters are shown in the drawings, they shall be supplied and installed by another contractor.

Structural Supports

- 16 All structural work for support of steel windows shall be provided by the structural steel contractor, who shall furnish a continuous angle not less than 3 " x 3 ", with a leg turned downward against which the sill member of the sash can bear to a depth of at least 1", providing the necessary weathering.

Painting

- 17 All windows shall give a heavy dip shop coat of protective oil paint before shipment.

Glazing

- 18 All continuous windows shall be constructed for outside glazing.
- 19 Glass shall be held in place by heavy spring brass glazing clips set in depressions provided in the muntin bars.
- 20 The glass shall be imbedded in putty on all four sides.
- 21 Metal window putty as manufactured by The Truscon Laboratories especially for continuous windows shall be used.

Erection

- 22 Any distortion of units which might occur in shipment or handling must be corrected in the field before erection.
- 23 All swing sections must be accurately adjusted after hanging and before glazing. Erection of sash shall be done by the manufacturer supplying same.

Bottom Hung Type

(The following paragraphs must be substituted in above specifications for the corresponding paragraphs for this type of continuous windows.)

- 6 The hinge shall be formed by bolting a continuous formed rolled member to the structural steel; which member shall be so designed as to interlock with the inner leg of the channel sill member of the sash unit, resulting in the continuous bearing and perfect weathering without the addition of built-up members or flashing. Z-bar clips, bolted to the sill, shall lock the sash and hinged members together. (This applies to bottom-hung type only.)
- 8 The design of sill members shall be of solid rolled section and so formed to provide a flange on the inside, which interlocks with the hinged section, resulting in a continuous bearing and perfect weathering without the addition of built-up members or flashing. Z-bar stay clips bolted to the sill lock the sash and hinged members

together. An additional heavy continuous angle shall be spot welded to the muntin bars for provision of attaching mechanical operators in sash over four feet high.

- 16 All structural work for support of steel windows shall be provided by the structural steel contractor, who shall furnish a continuous angle not less than 3 " x 3 ", with a leg turned downward against which the channel head member of the sash can bear to the depth of at least $2\frac{1}{8}$ ", providing the necessary weathering.
- 19 Glazing lugs, bolted to the muntins, shall securely hold the glass in place and relieve the strain from the putty when the window is in an open position.

Horizontally Pivoted

(The following paragraph must be substituted in above specifications for the corresponding paragraph for this type of continuous windows.)

- 6 For the horizontally pivoted continuous, the pivot hinge shall be attached to an angle spot welded to the muntin bars and connected to the channel support furnished by the structural contractor. Pivots should be provided every six feet. (This applies to center

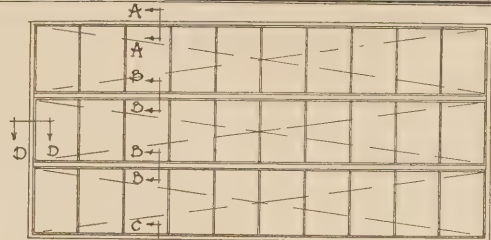
pivoted type only.) Weathering between the fixed and pivoted windows has been accomplished by hinging a channel to the top structural member and allowing same to ride on an angle at rail of fixed and pivoted windows.

These Specifications cover the following Drafting Room Standards:

E-1 (page 55)	E-2-A (page 57)	E-5 (page 60)
E-2 (page 56)	E-3 (page 58)	E-6 (page 61)
	E-4 (page 59)	

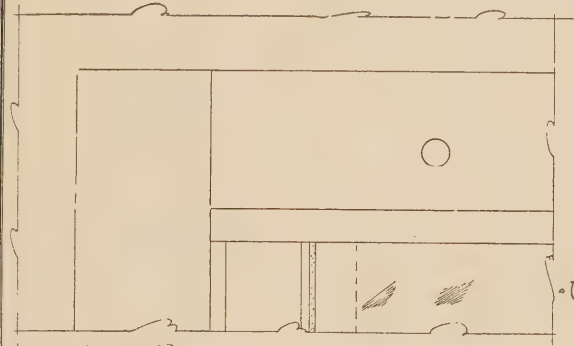
• NOTE •

TRUSCON CONTINUOUS SASH SHOULD BE CONTROLLED BY MEANS OF TRUSCON MECHANICAL OPERATORS. THE SASH MAY BE OPERATED IN SINGLE RUNS OR IN GROUPS CONTROLLED EITHER BY HAND OR ELECTRIC POWER

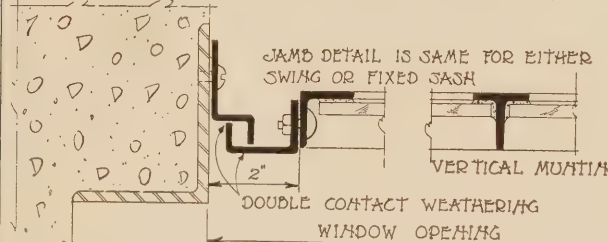


• TYPICAL • EXTERIOR • ELEVATION •

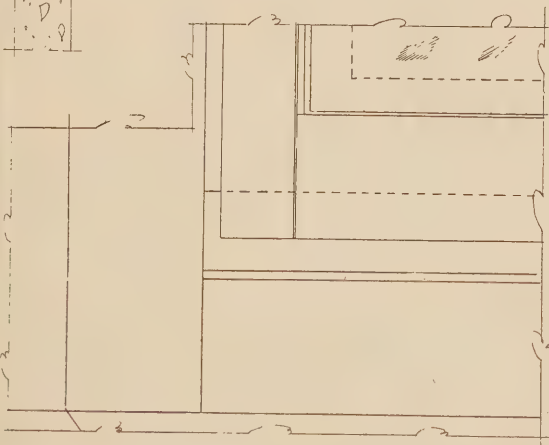
HEIGHT AND WIDTH OF WINDOWS AND POSITION OF SWING UNITS MAY BE ARRANGED TO MEET STRUCTURAL REQUIREMENTS



• ELEVATION •
• UPPER • CORNER •

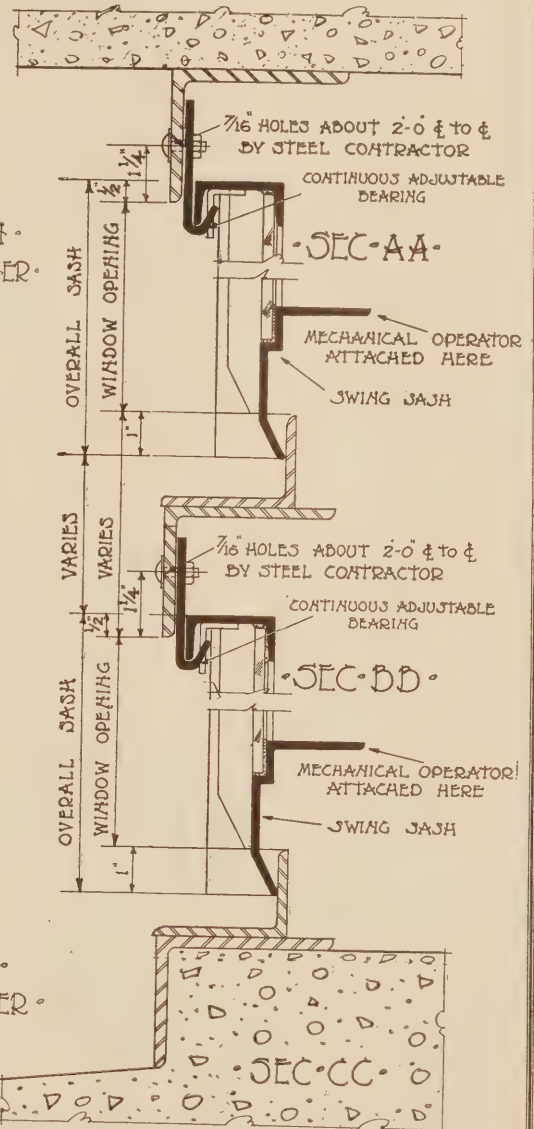


• SEC • DD •



• ELEVATION •
• LOWER • CORNER •

SCALE 3" = 1'-0"



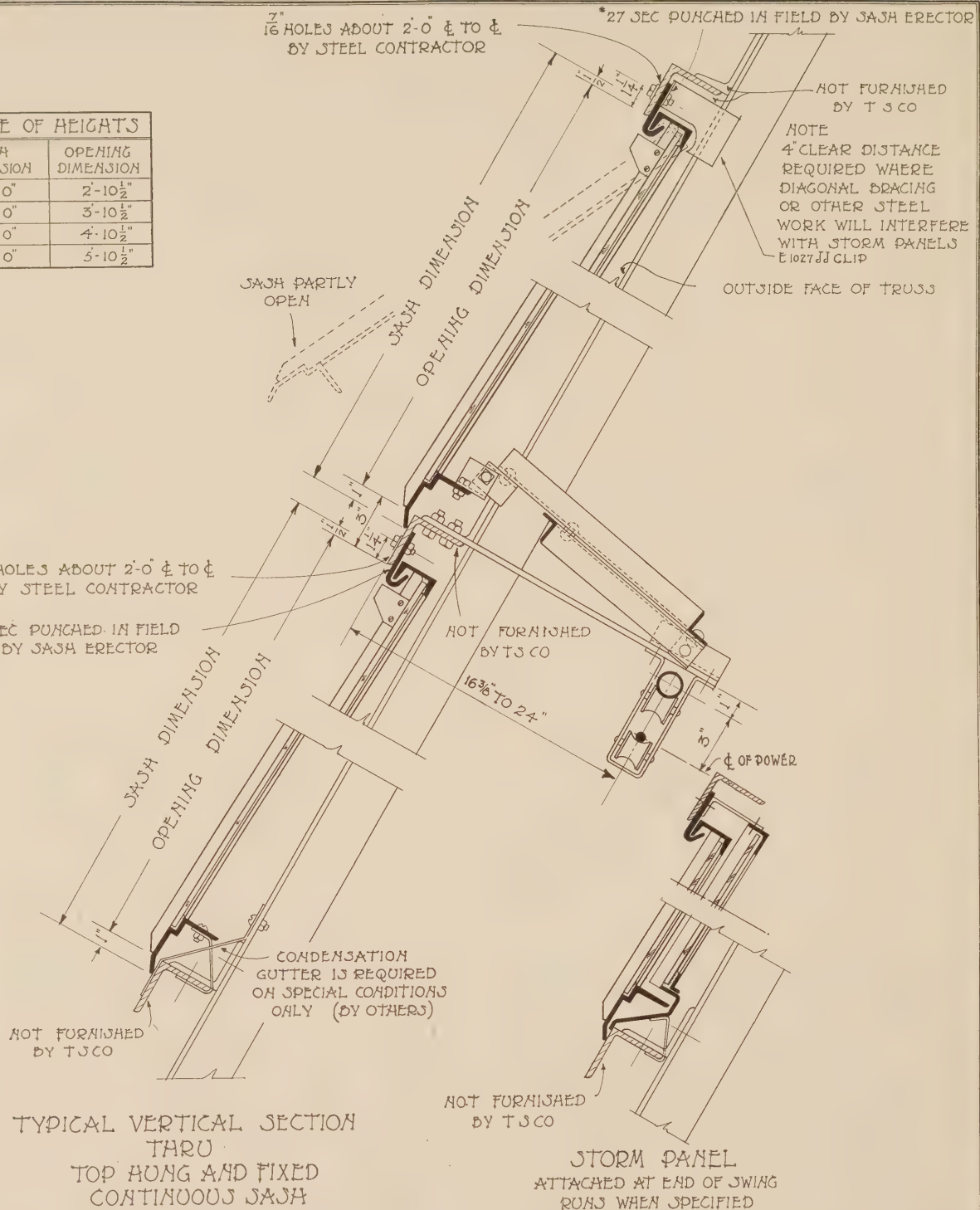
TRUSCON
STEEL WINDOWS

• OPENINGS WITH STRUCTURAL STEEL FRAMES •
TRUSCON TOP HUNG CONTINUOUS STEEL WINDOWS
• TRUSCON • STEEL • COMPANY •

• YOUNGSTOWN • OHIO •

E-1
FEB-1929

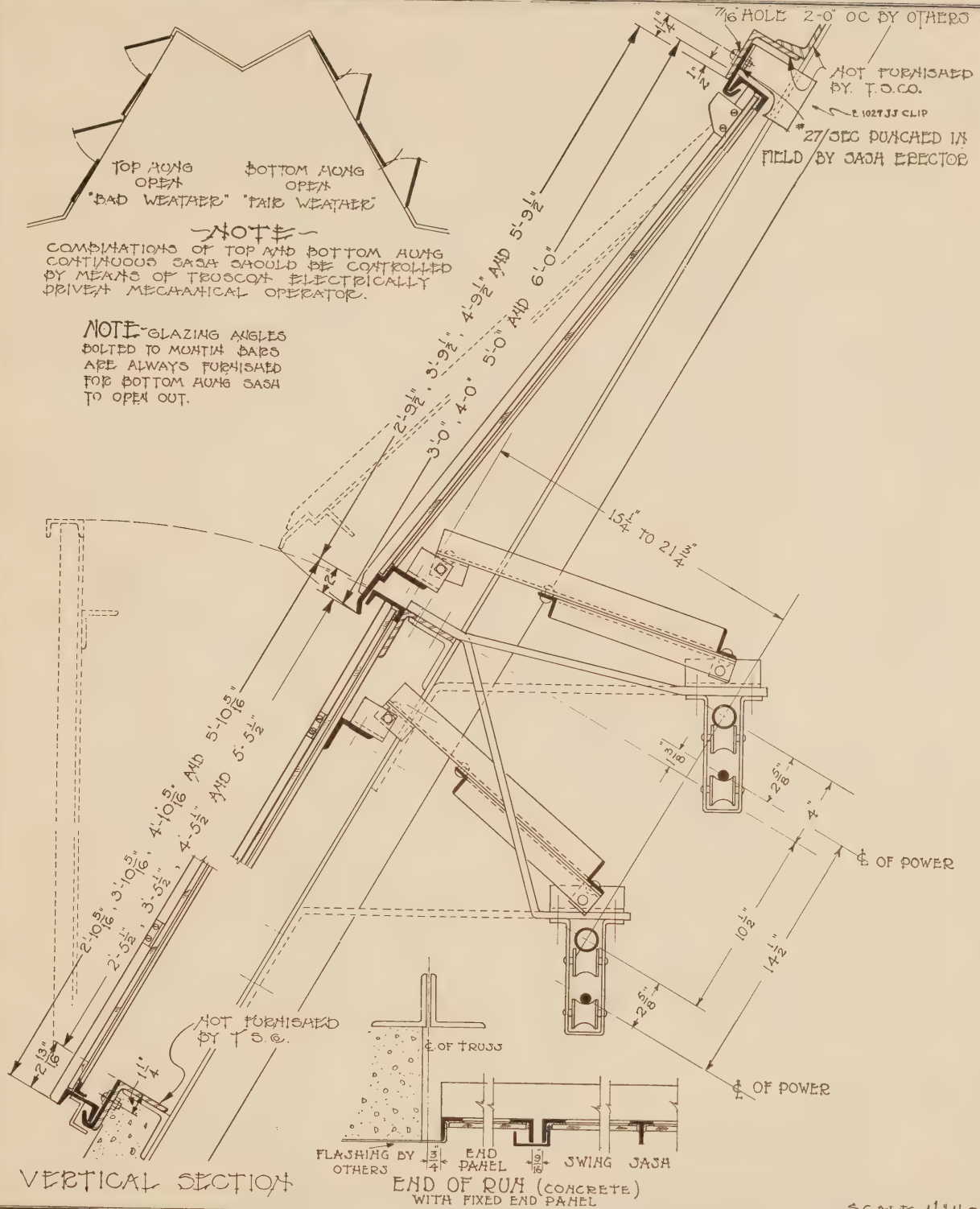
TABLE OF HEIGHTS	
SASH DIMENSION	OPENING DIMENSION
3'-0"	2'-10 $\frac{1}{2}$ "
4'-0"	3'-10 $\frac{1}{2}$ "
5'-0"	4'-10 $\frac{1}{2}$ "
6'-0"	5'-10 $\frac{1}{2}$ "



TRUSCON
STEEL WINDOWS

TOP HUNG AND FIXED RUNS ON SLOPE
TRUSCON CONTINUOUS STEEL WINDOWS
TRUSCON STEEL COMPANY YOUNGSTOWN OHIO

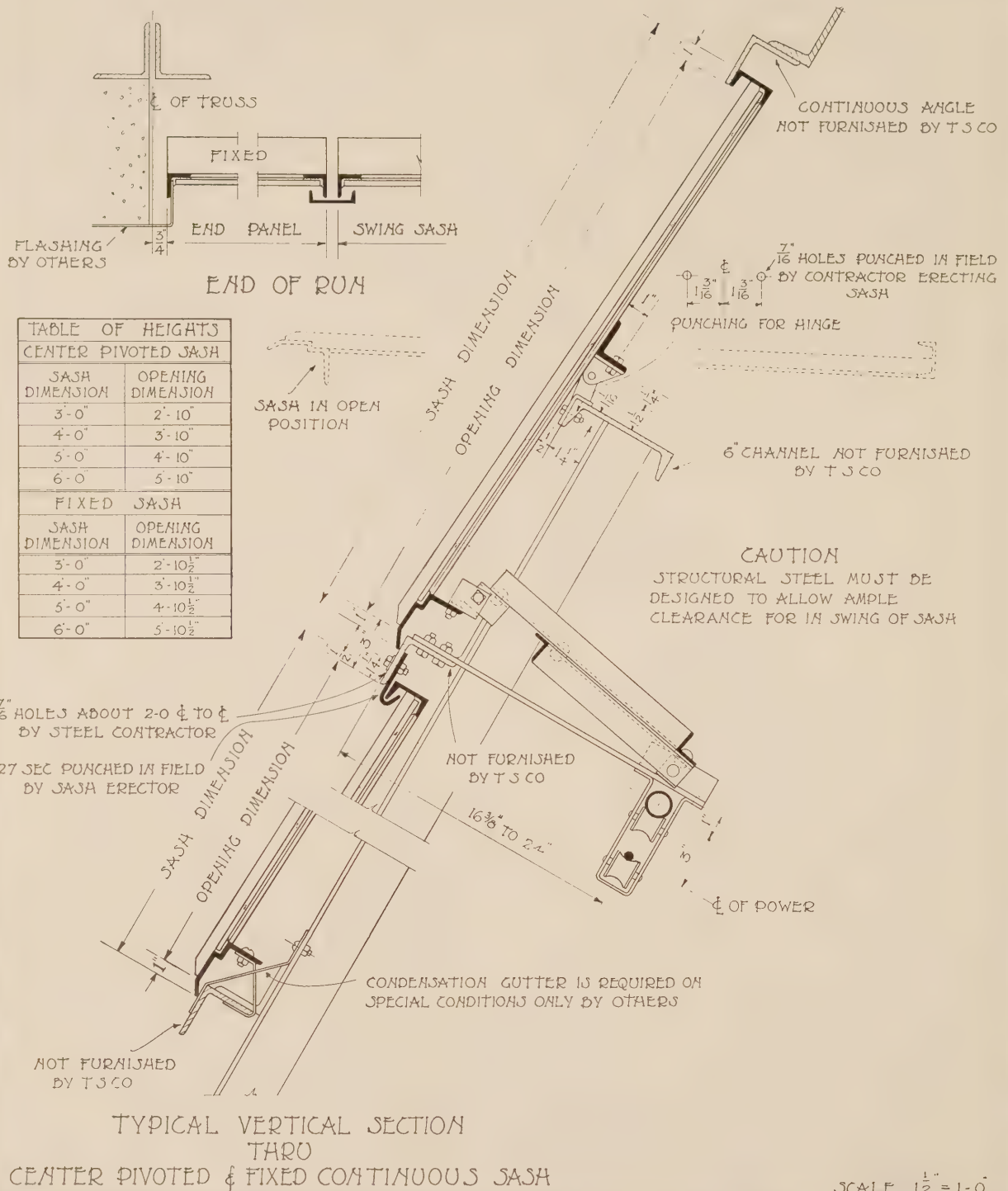
E-3
APRIL 1929



TRUSCON
STEEL WINDOWS

COMBINATION OF TOP AND BOTTOM HUNG
TRUSCON CONTINUOUS STEEL WINDOWS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

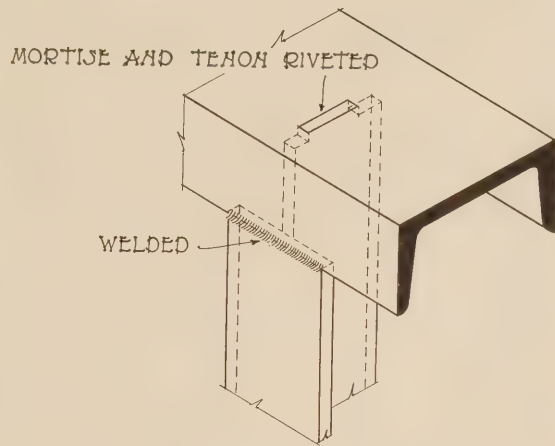
E-4
DEC-1928



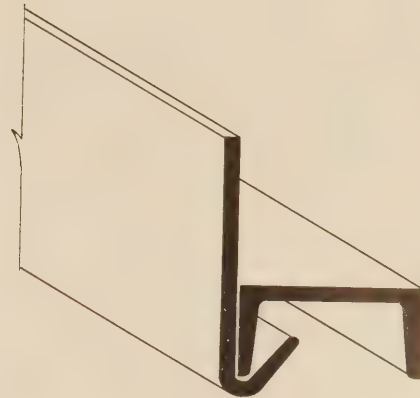
TRUSCON
STEEL WINDOWS

INSTALLATION DETAILS CENTER PIVOTED TYPE
TRUSCON - CONTINUOUS - SASH
TRUSCON STEEL COMPANY YOUNGSTOWN OHIO

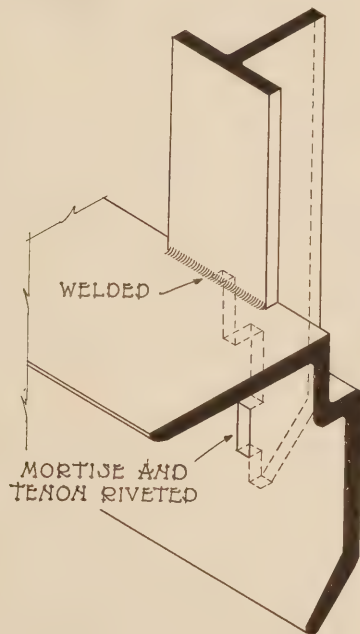
E-5
JULY-1928



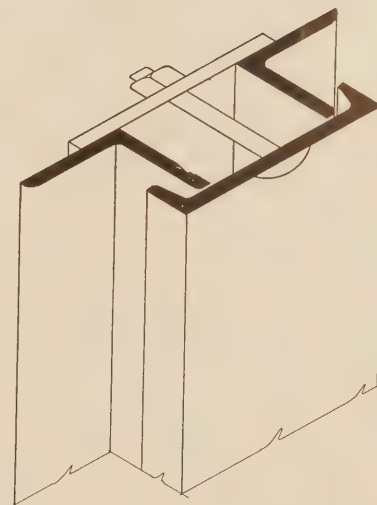
• INSIDE • VIEW •
• TOP • JOINT • AT • MUNTIN •



• CONTINUOUS • HINGE •



• INSIDE • VIEW •
• BOTTOM • JOINT • AT • MUNTIN •



• VERTICAL • EXPANSION •
• MULLION •

• SCALE • 6" = 1'-0" •

TRUSCON
STEEL WINDOWS

• HEAD • SILL • AND • VERTICAL • MULLION •
TRUSCON • CONTINUOUS • SASH
• TRUSCON • STEEL • COMPANY •
• YOUNGSTOWN • OHIO •

E-6
JULY-1928

Specifications on page 54

TRUSCON TENSION OPERATORS FOR STEEL WINDOWS SPECIFICATIONS

General

- 1 All runs of top (or bottom) hung continuous windows, where indicated on architectural drawings to be operated with toggle arms, will be equipped with one of the following tension powers as manufactured by the Truscon Steel Company, Youngstown, Ohio. No substitution will be permitted without the written consent and approval of the architect.
- 2 Selection of power is dependent upon length of run of windows to be operated and individual building conditions.

Powers

- 3 Power No. E-1002, shall consist of a milled steel driving worm and a cut bronze gear, both enclosed in a dustproof case with the worm immersed in oil. The worm and worm shaft shall be machined from one solid piece of steel mounted on the highest grade radial-thrust ball bearing.
- 4 A heavy roller driving shain shall be used to transmit power to the tension shaft. The chain shall travel over sprockets and idlers in the power and shall have ends attached to tension shaft. Power and idlers shall be securely attached to building construction at ends of run.
- 5 Power No. E-1001. Same specification applies as for E-1002 except power is attached to building construction at approximately one-quarter the length of run as measured from the end.
- 6 Powers No. E-1028 (heavy duplex) and E-1089, (light duplex). Same specification applies as for No. E-1002 except power is attached at center of run and load shall be distributed to two driving sprockets in such manner that tension rods may be operated in both directions from the power.
- 7 Powers No. E-1000 and E-1001 can be operated either manually or by electrical control. Powers No. E-1002 and E-1028 MUST BE operated by electrical control, as hand operated is too slow. Power No. E-1089 may be furnished for hand operation by special arrangement.

Tension Shaft

- 8 Power shall be transmitted by parallel lines of steel tension rods attached to the sprocket chain of power at one end of run, and passing over an idler pulley at opposite ends. Idle tension rods shall be connected end to end with heavy steel swivel couplings. The live tension line shall be pipe, mounted on substantial roller brackets, securely attached to building construction. Pipes shall be joined by internal screw couplings so as to make a flush joint, developing the full strength of the pipe. For power No. E-1001, tension return is omitted.

Toggle Lever Arms

- 9 Windows shall be opened and closed by means of toggle lever arms, so constructed that the force exerted constantly increases with the opening of windows. The toggle lever arms shall be rigidly constructed of substantial steel angles. They shall

be provided with heavy universal connections to the windows and horizontal tension shafting.

Motors

- 10 A completely enclosed motor shall be furnished with each power and shall be attached directly to the power housing. The motor shall be special oil-less or ball-bearing type and wound for high starting torque, operating on multi-phase current.
- 11 The motor is directly connected to the power by means of a silent chain belt passing over sprockets on motor shaft and shaft of power.
- 12 The above applies to all powers with exception of power No. E-1089, on which the motor shall be directly connected to the power by means of a gear and pinion, one keyed to the shaft of power and the other keyed to the shaft of motor.
- 13 (Use this paragraph for hand-operated powers). Force shall be applied through an endless chain passing over a chain wheel keyed to the worm shaft of operating power, and extending downward to within convenient use of operating station. Suitable chain guards shall be furnished as part of the operator by the manufacturer.

Limit Switches

- 14 The operator manufacturer shall furnish suitable safety limit switches attached directly to each operator power, to automatically cut off current when windows reach full open or closed position.

Electrical Fittings

- 15 All motors, individual push buttons and reversing controllers shall be furnished by the operator manufacturer.
- 16 All wiring, conduits, cut-out switches and other accessories shall be furnished by electrical contractor. Wiring diagram for motors will be furnished by operator manufacturer.

Structural Steel Supports

- 17 When necessary, suitable structural steel supports for operators shall be provided under structural steel contract. Punching for attaching windows and operators to structural steel shall be done by the structural contractor.

Painting

- 18 All exposed parts of operators shall be given a shop coat of steel protective paint by the manufacturer before shipment. After erection, all operating parts shall be painted by the painting contractor as specified.

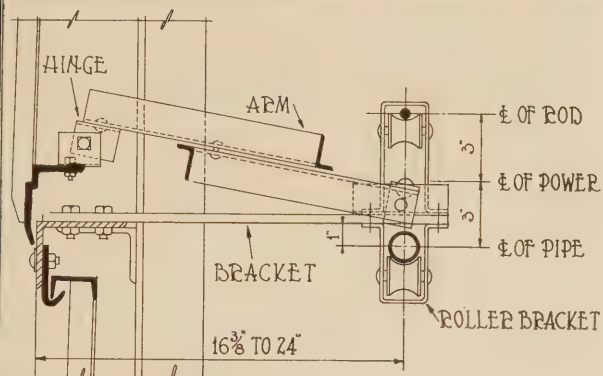
Erection

- 19 All operators shall be erected by the manufacturer or other approved erectors before any glazing is started. All ventilators must be adjusted before arms are attached, and thoroughly inspected to insure free operating and tight closing. All operating devices to be left in complete working order.

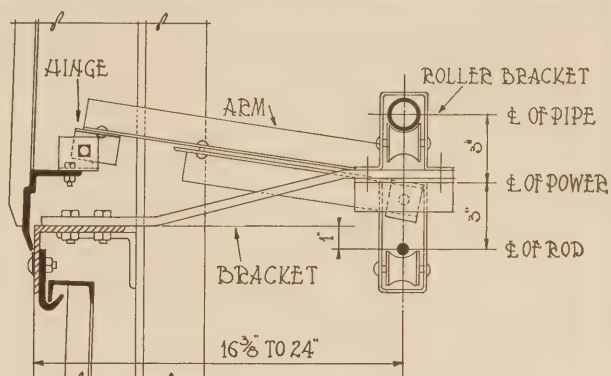
**These Specifications cover the following
Drafting Room Standards:**

F-1 (page 63)
F-3 (page 64)

F-4 (page 65)
F-5 (page 66)



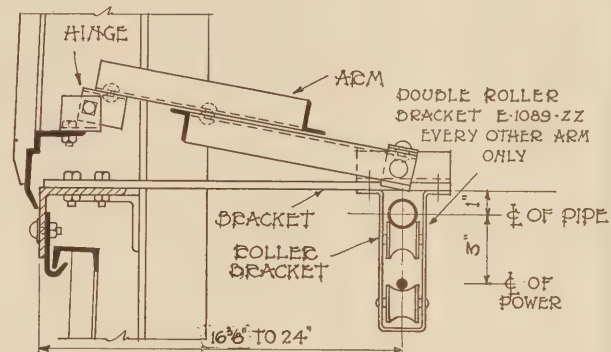
BRACKET "A" ATTACHED DIRECTLY TO SILL ANGLE



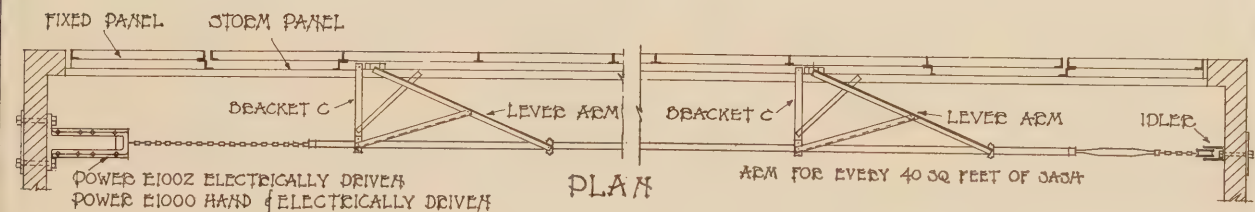
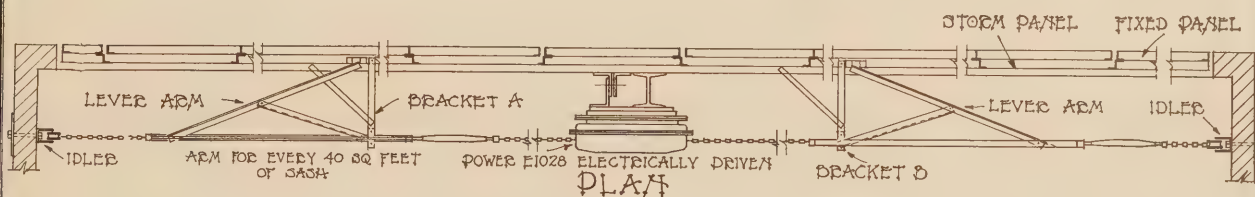
BRACKET "B" ATTACHED DIRECTLY TO SILL ANGLE

NOTE

SEE SHEET F4 FOR E1028 POWER
SEE SHEET F3 FOR E1002 POWER
SEE SHEET F3 FOR E1000 POWER
SEE SHEET F4 FOR E1089 POWER



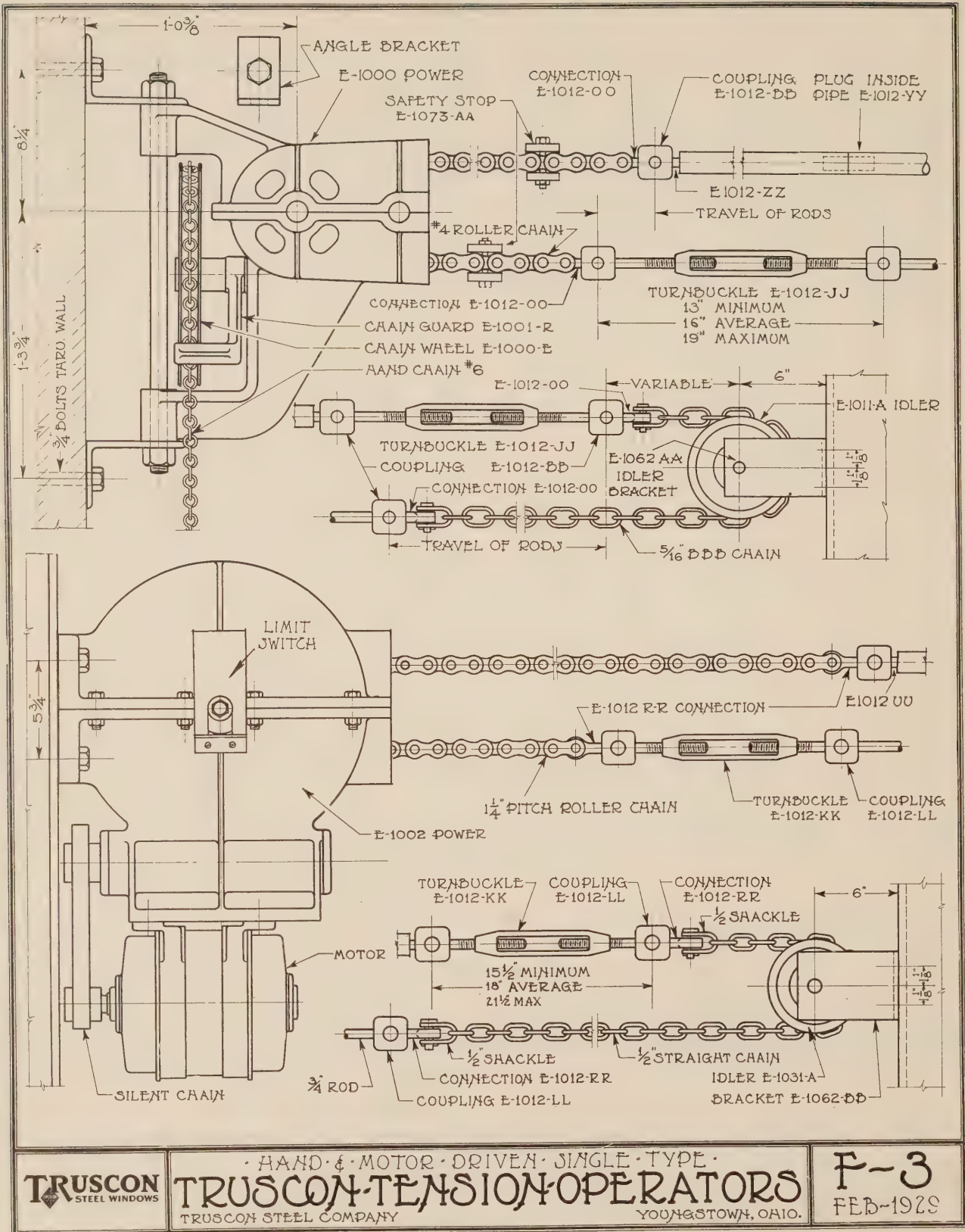
BRACKET C ATTACHED DIRECTLY TO SILL ANGLE



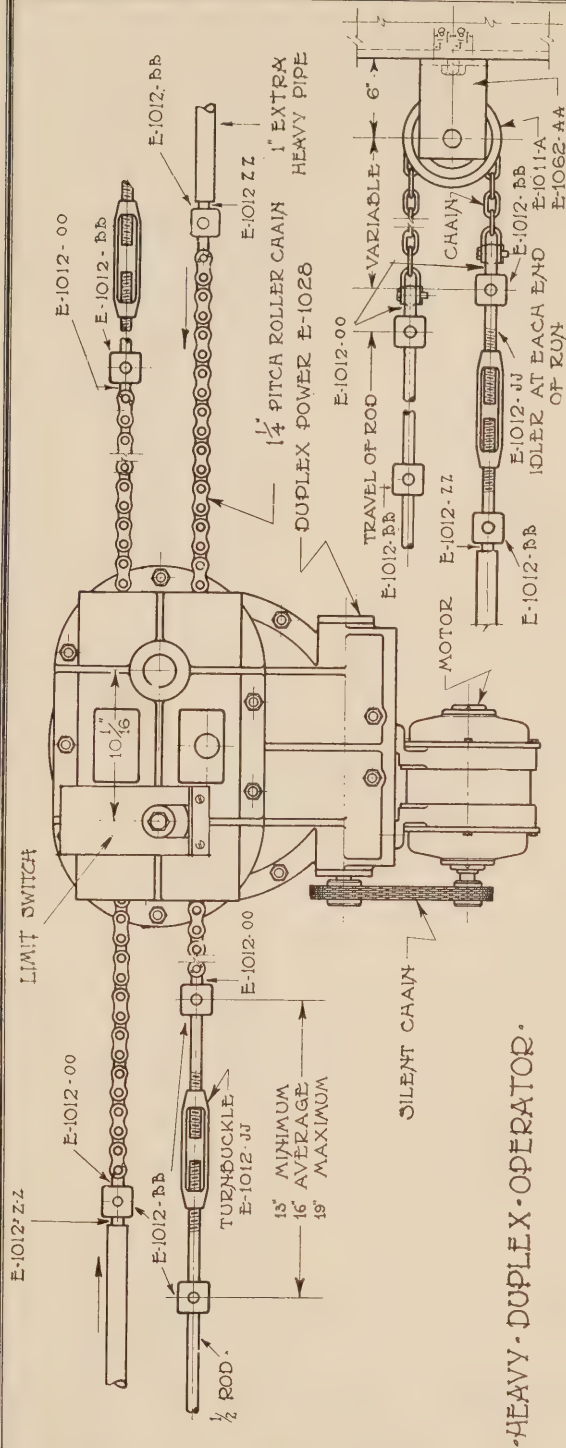
TRUSCON
STEEL WINDOWS

TOGGLE LEVER ARM TYPE
TRUSCON TENSION OPERATORS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

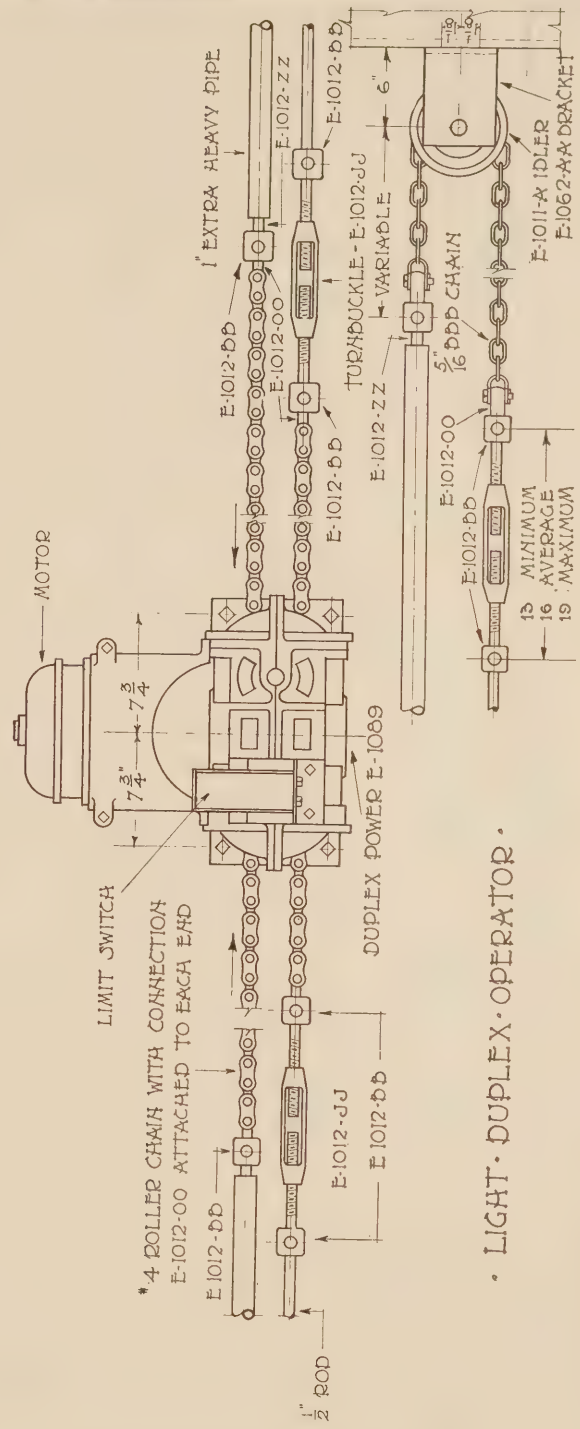
F-1
MARCH-1929



Specifications on page 62



HEAVY-DUPLEX-OPERATOR.

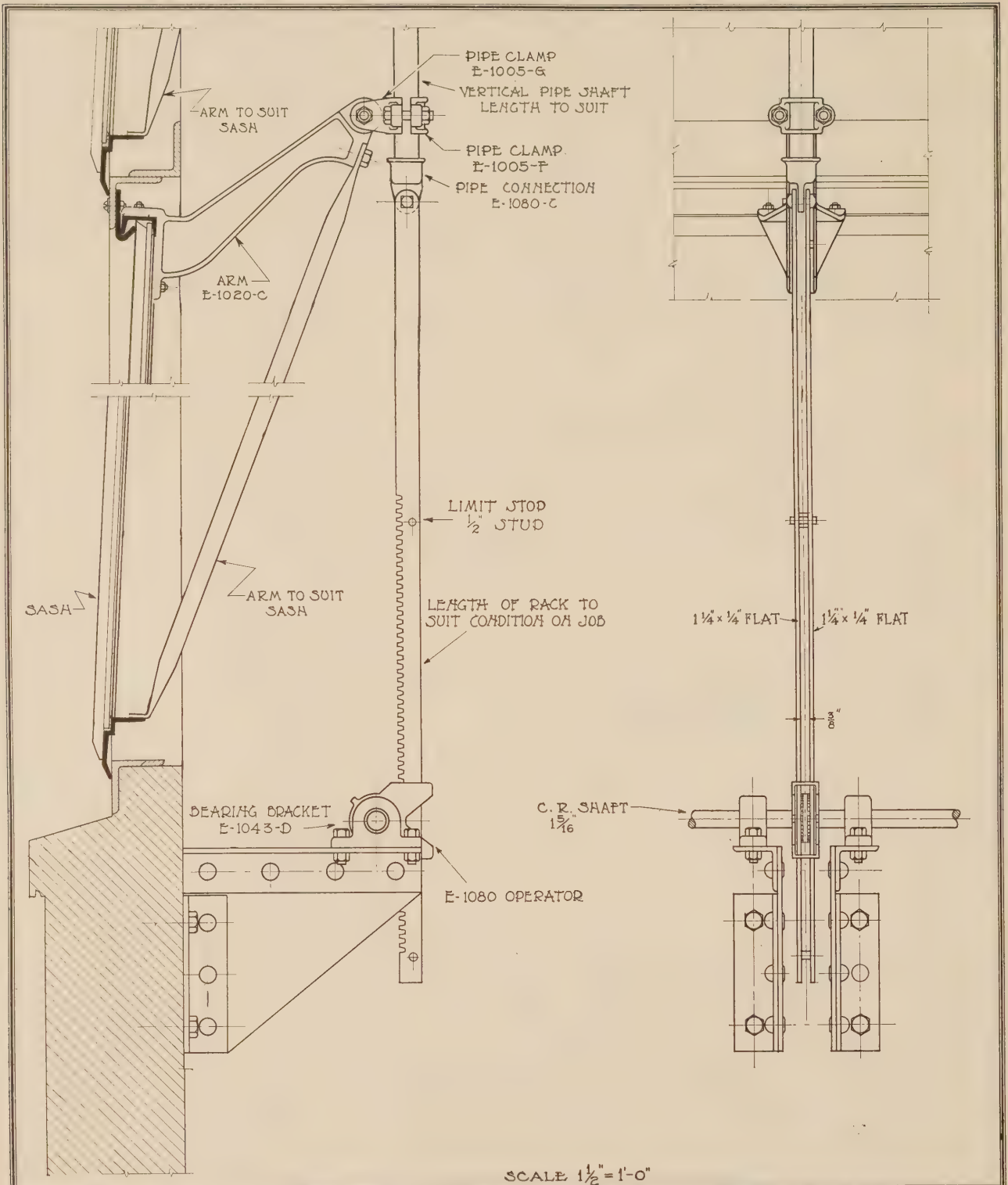


• LIGHT-DUPLEX-OPERATOR.

TRUSCON
STEEL WINDOWS

ELECTRICALLY-DRIVEN-HEAVY-&-LIGHT-DUTY-DUPLEX-TYPE.
TRUSCON TENSION OPERATOR
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO.

F-4
JULY-1928



TRUSCON
STEEL WINDOWS

HEAVY VERTICAL TYPE—TOP HUNG CONTINUOUS SASH—
TRUSCON TENSION OPERATOR
 TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO.

F-5
 APRIL 1929

TRUSCON TORSION OPERATORS FOR STEEL WINDOWS

LEVER ARM TYPE

SPECIFICATIONS

General

- 1 All runs of steel windows with pivoted ventilators, shown on the drawings as "mechanically operated," shall be controlled by an E-1013 or E-1040 Torsion type operator, as manufactured by the Truscon Steel Company, Youngstown, Ohio. No substitution will be permitted without written consent and approval of the architect.

Powers and Control Applications

- 2 POWER E-1013 (For hand control only).
Power shall consist of a worm and gear segment mounted in a suitable steel supporting frame provided with brackets for attaching to building construction. The driving worm shall be of malleable iron, mounted on a steel shaft and the gear segment shall be of high grade cast iron and its teeth shall mesh with the worm thread.

Various control applications are furnished in connection with Power E-1013 as follows:

Type A—Ordinary chain control.

Type AA—Vertical shafting with horizontal hand wheel.

Type AB—Vertical shafting, open mitre gear with vertical hand wheel.

Type AC—Vertical shafting, open mitre gear with vertical chain wheel and chain.

Type AD—Vertical shafting, closed mitre gear and vertical hand wheel.

All of the above types are for HAND CONTROL, ONLY.

POWER E-1040 (Hand or Electrical Control)

- 3 This power shall be used for Heavy Duty Torsion Type operators and for usages similar to those for Power E-1013.

Power E-1040 can be furnished for either HAND or ELECTRICAL CONTROL. (Where the power is motorized, it should be designated E-1040 BM.)

Horizontal Shafting

- 4 Motion shall be transmitted to window ventilators by a horizontal shaft and properly proportioned lever arms. The horizontal shaft shall be wrought iron pipe with rigid couplings securely locking individual lengths together.

Lever Arms

- 5 Each ventilator shall be connected to the horizontal shaft by a pressed steel lever arm and connecting rod of $\frac{3}{4} \times \frac{3}{4}$ T-Bar.

Motors

- 6 Motion shall be applied to the power by means of a motor. A sprocket keyed to motor shaft shall be connected with a gear keyed to worm shaft of power by means of a silent chain belt.
- 7 Motion shall be applied to horizontal torsion shaft by means of a roller chain belt passing over a sprocket attached to shaft of bronze gear in the power and a gear attached to horizontal torsion shaft.
- 8 Operator manufacturer reserves right to connect motor direct to horizontal shafting where conditions will permit.
- 9 The motor shall be completely enclosed, provided with ball or oil-less bearings and shall be wound for high starting torque, operating on multi-phase current.

Limit Switches

- 10 The operator manufacturer shall furnish suitable safety limit switches attached directly to each operator power, to automatically cut off current when windows reach full open or closed position.

Electrical Fittings

- 11 All motors, individual push buttons and reversing controllers shall be furnished by the operator manufacturer.
- 12 All wiring, conduits, cut-out switches and other accessories shall be furnished by electrical contractor.
- 13 Wiring diagram for motors will be furnished by operator manufacturer.

Structural Steel Supports

- 14 When necessary, suitable structural steel supports for operators shall be provided under structural steel contract.
- 15 Punching for attaching windows and operators to structural steel shall be done by the structural contractor.

Painting

- 16 All exposed parts of operators shall be given a shop coat of steel protective paint by the manufacturer before shipment. After erection, all operating parts shall be painted by the painting contractor as specified.

Erection

- 17 All operators shall be erected by the manufacturer or other approved erectors before any glazing is started. All ventilators must be adjusted before arms are attached, and thoroughly inspected to insure free operating and tight closing. All operating device to be left in complete working order.

These Specifications cover the following
Drafting Room Standards:

F-7 (page 68)

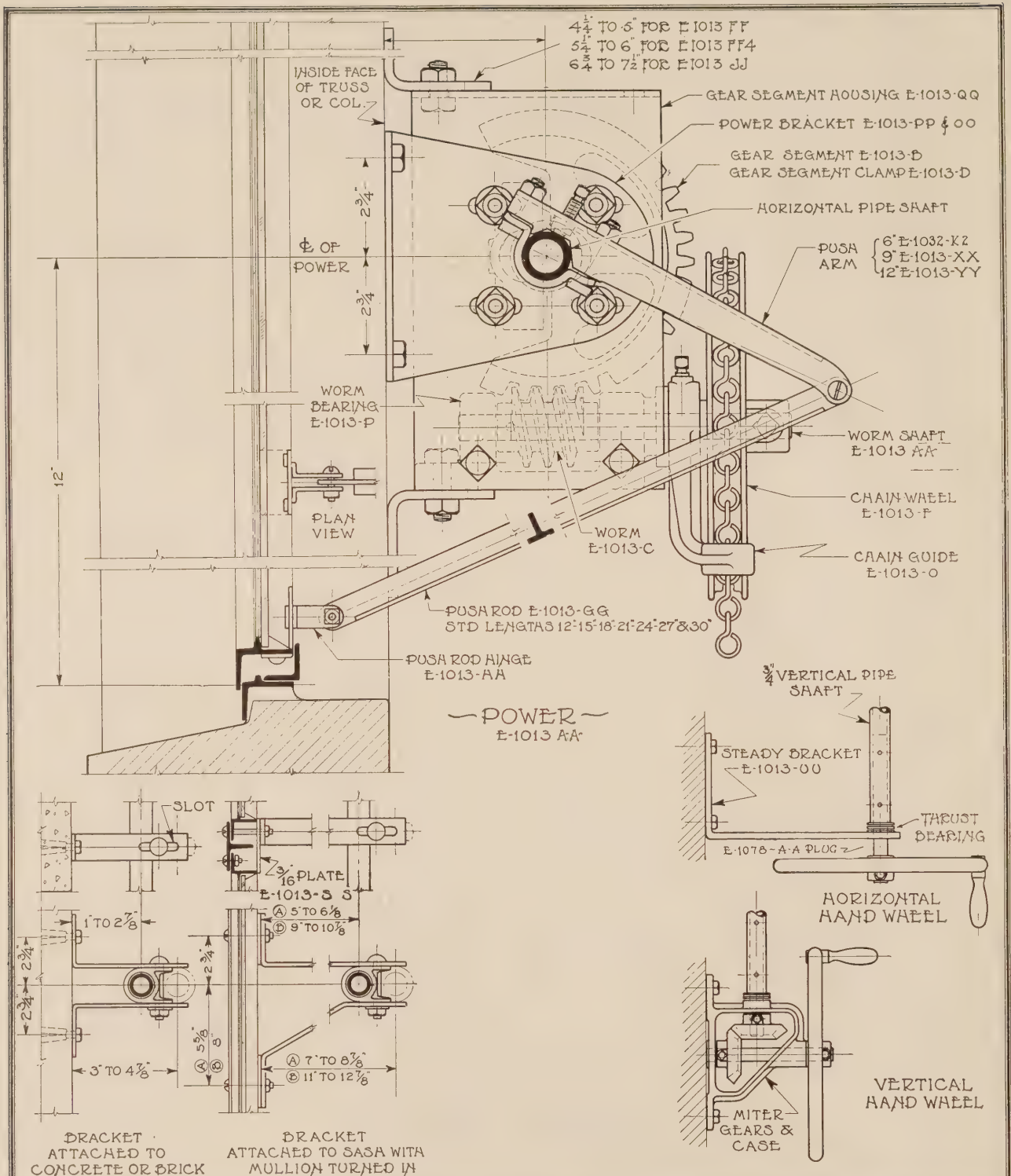
F-9 (page 70)

F-8 (page 69)

F-10 (page 71)

F-13 (page 72)

YOUNGSTOWN
UNIVERSITY

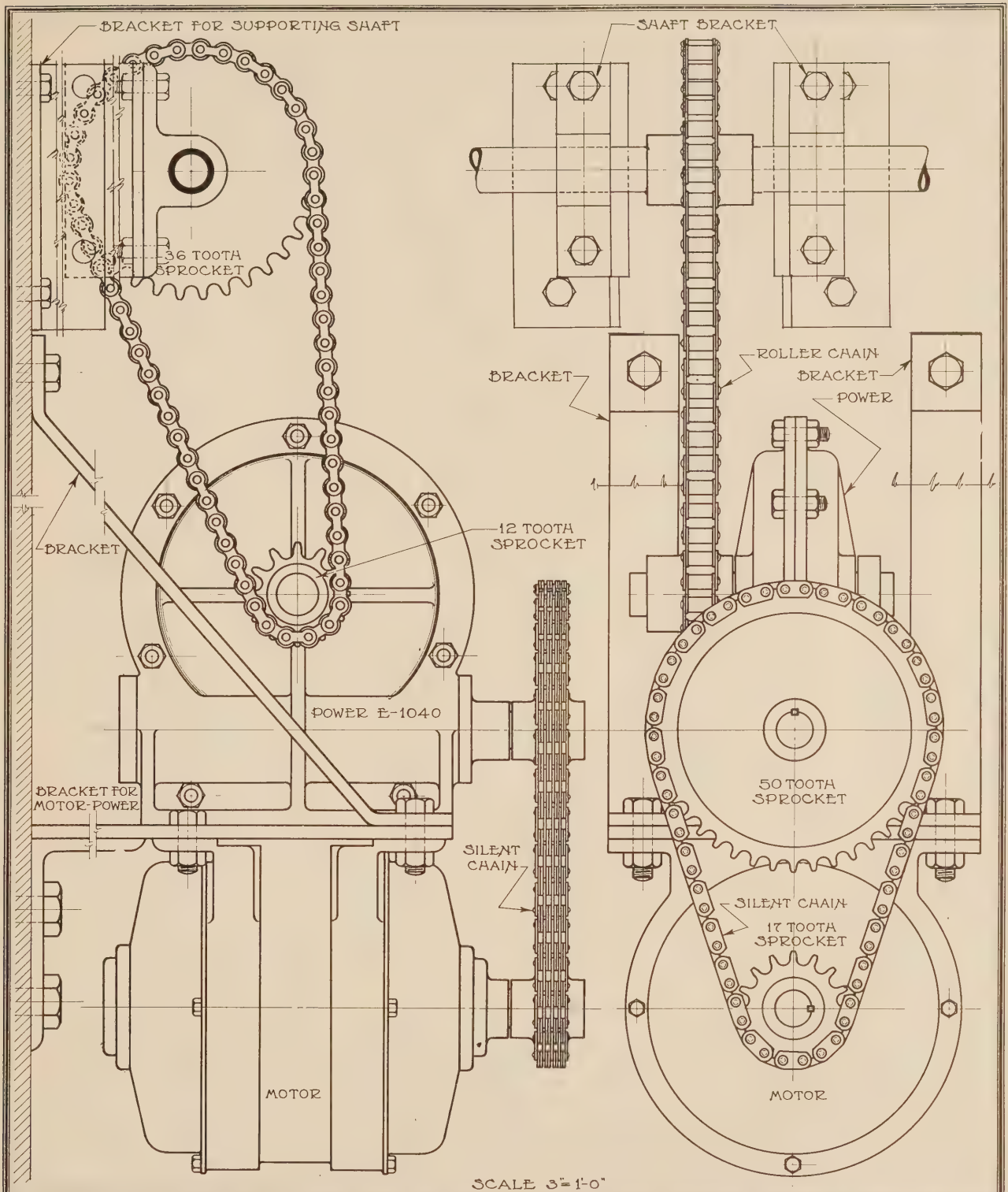


TRUSCON
STEEL WINDOWS

TYPICAL INSTALLATION DETAILS -
TRUSCON TORSION OPERATORS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

F-7
JULY-1928

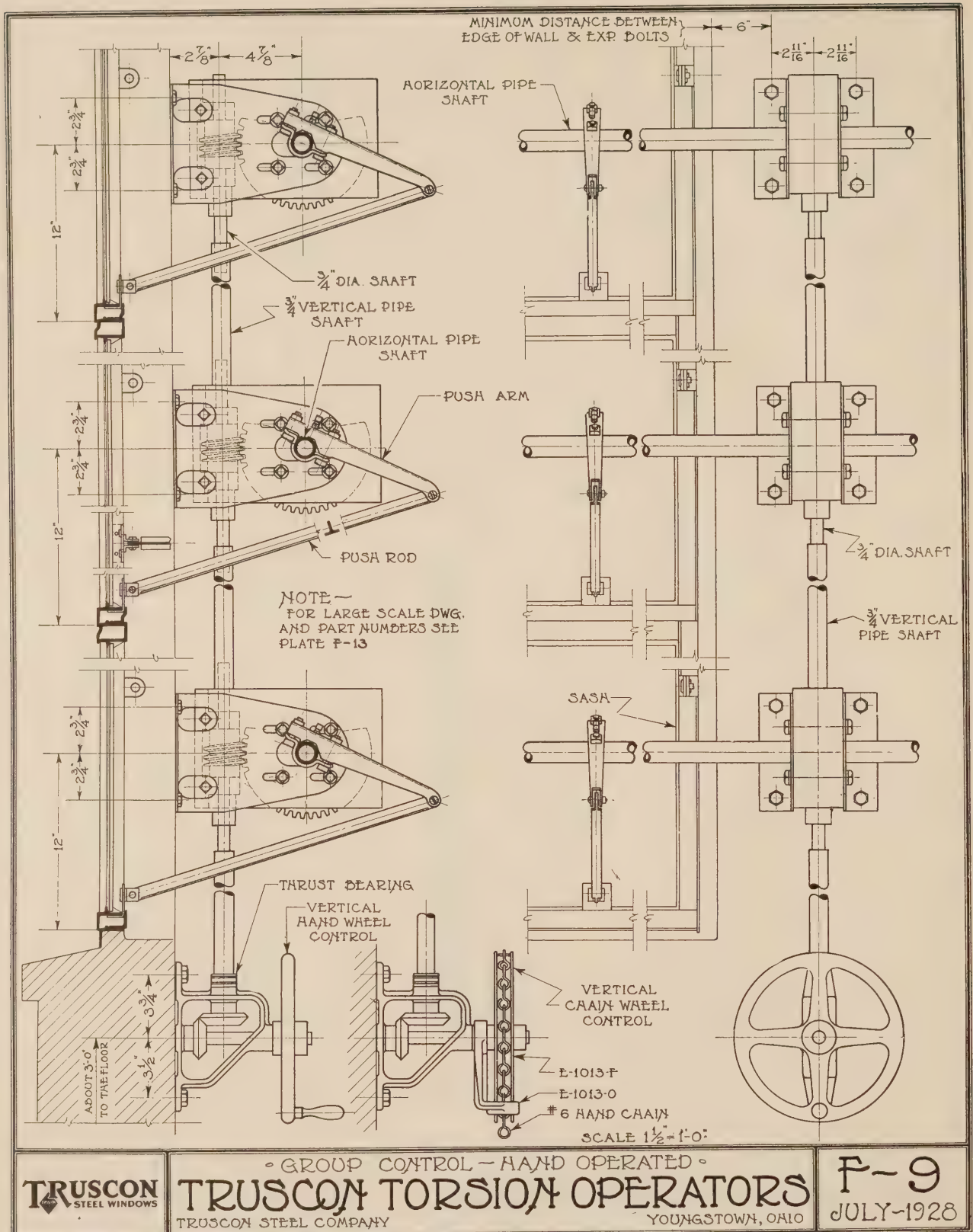


TRUSCON
STEEL WINDOWS

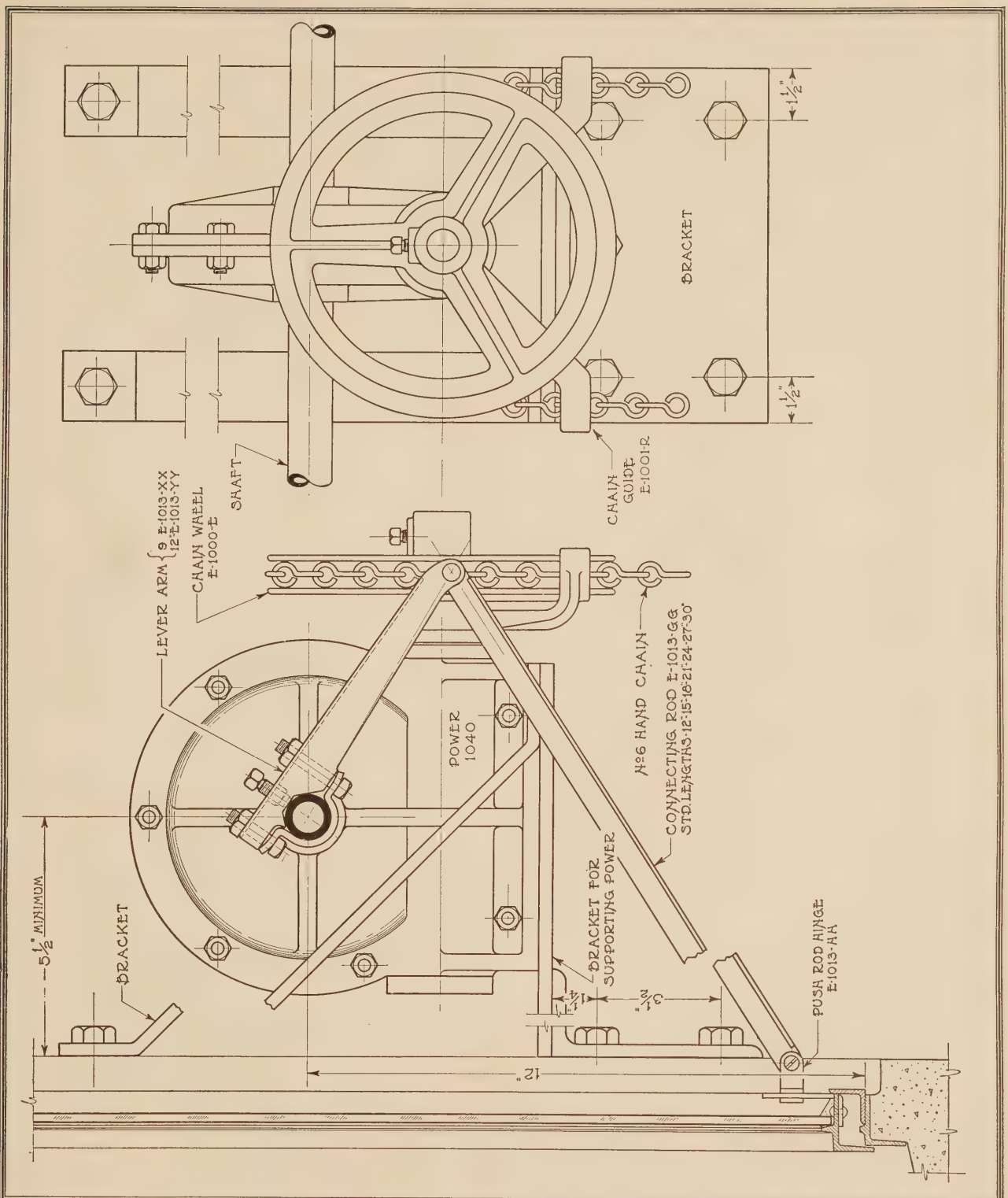
INSTALLATION DETAILS—MOTOR OPERATED—
TRUSCON TORSION OPERATOR
 TRUSCON STEEL COMPANY YOUNGSTOWN, OHIO.

F-8
 JULY-1928

Specifications on page 67



Specifications on page 67

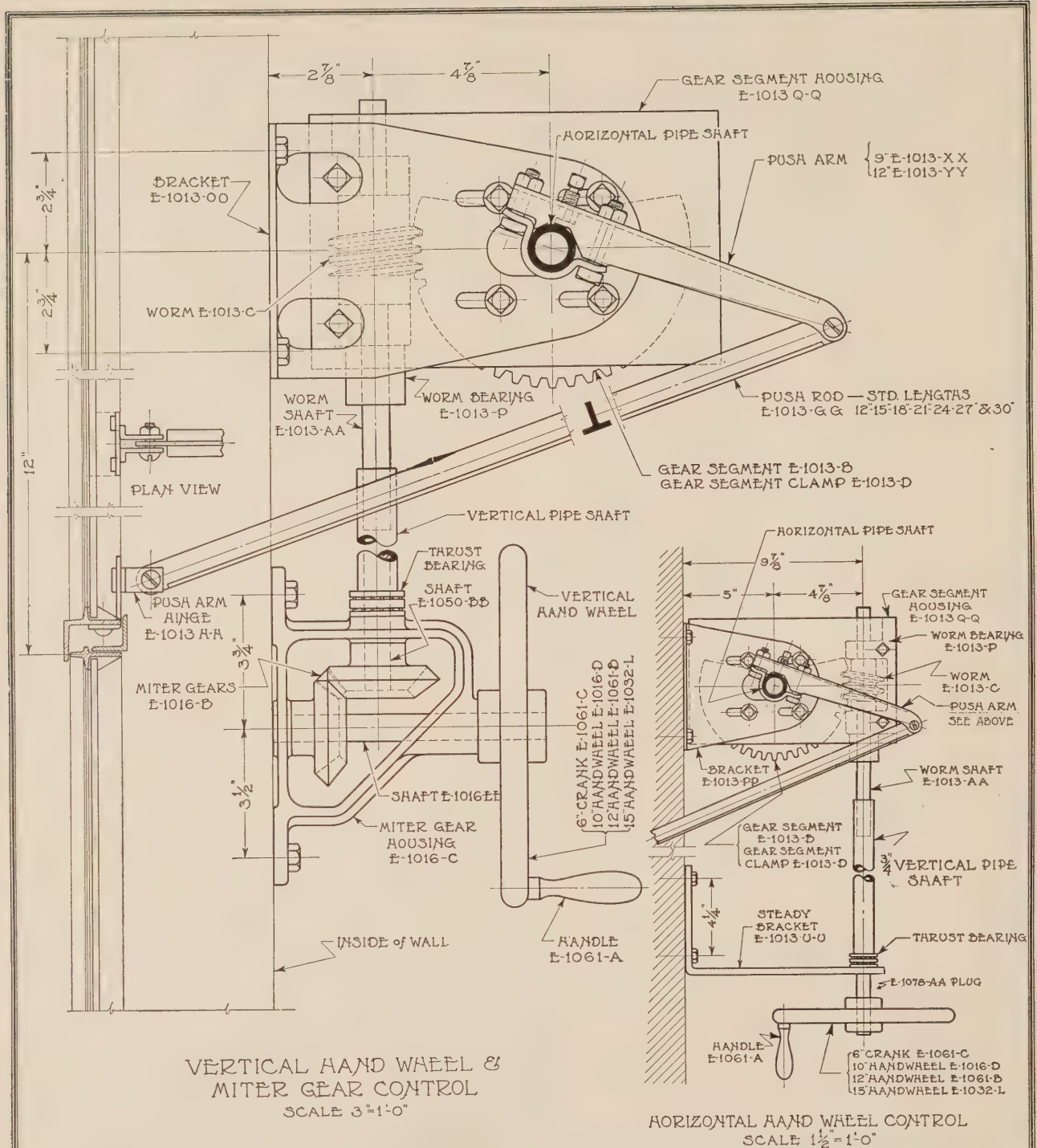


TRUSCON
STEEL WINDOWS

HEAVY DUTY HAND OPERATED POWER
TRUSCON TORSION OPERATOR
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

F-10
JULY-1928

Specifications on page 67



TRUSCON
STEEL WINDOWS

• VERTICAL HAND WHEEL & MITER GEAR CONTROL •
TRUSCON TORSION OPERATOR
 TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

F-13
JULY-1928

TRUSCON TORSION OPERATORS FOR STEEL WINDOWS

RACK AND PINION TYPE

SPECIFICATIONS

General

- 1 All horizontally pivoted ventilators, projected ventilators or short runs of 3 foot high continuous windows, where indicated on the architectural drawings as "mechanically operated," shall be equipped with a Rack and Pinion operator with one of the following types of powers, as manufactured by the Truscon Steel Company, Youngstown, Ohio.

Powers—(For Hand Operation, Only)

- 2 Power E-1047 (suitable for short runs) shall consist of a worm and gear mounted in a suitable steel supporting frame provided with brackets for attaching to building construction. The driving worm shall be of malleable iron, mounted on steel shaft, and the gear shall be of high grade cast iron and its teeth shall mesh with the worm thread.

Power E-1082 is recommended where it is necessary to install operator close to walls.

Horizontal Shafting

- 3 Motion shall be transmitted to window ventilators by a horizontal shaft and properly proportioned lever arms. The horizontal shaft shall be of a wrought iron pipe with rigid couplings securely locking individual lengths together.
- 4 Motion shall be applied to the power by means of an endless galvanized hand chain passing over a chain wheel rigidly attached to the worm shaft of the power. The chain shall extend downward to within convenient reach of operating station.

Racks

- 5 The racks shall be made from steel bars with machined teeth.

Powers—(For Hand or Electrical Control)

- 6 Power E-1040 (suitable for long runs) shall consist of a milled steel driving worm and a cut bronze gear, both enclosed in a dustproof case with worm immersed in oil. The worm shaft shall be machined from one solid piece of steel and shall be provided with ball thrust bearings.
- 7 When power E-1040 is motorized it should be designated E-1040 BM. Motion to be applied to the power by means of a motor. A sprocket keyed to the motor shaft shall be connected with a gear keyed to the worm shaft of power by means of a silent chain belt.

- 8 Motion shall be applied to horizontal torsion shaft by means of a roller chain belt passing over a sprocket attached to shaft of bronze gear in the power and a gear attached to horizontal torsion shaft.

- 9 The motor shall be completely enclosed, provided with ball or oilless bearings and shall be wound for high starting torque, operating on a multi-phase current.

Limit Switch

- 10 The operator manufacturer shall furnish suitable safety limit switches directly attached to each operator power, to automatically cut off current when sash reaches full open or closed position.

Electrical Fittings

- 11 All motors, individual push buttons, and reversing controller shall be furnished by the operator manufacturer.
- 12 All wiring conduits, cut-out switches, and other electrical accessories shall be furnished under another contract. Wiring diagram for motors and control panels will be furnished by operator manufacturer.

Structural Supports

- 13 When necessary, suitable structural steel supports for operators shall be provided under structural steel contract. Punching for attaching sash and operators to structural steel shall be done by structural contractor.

Painting

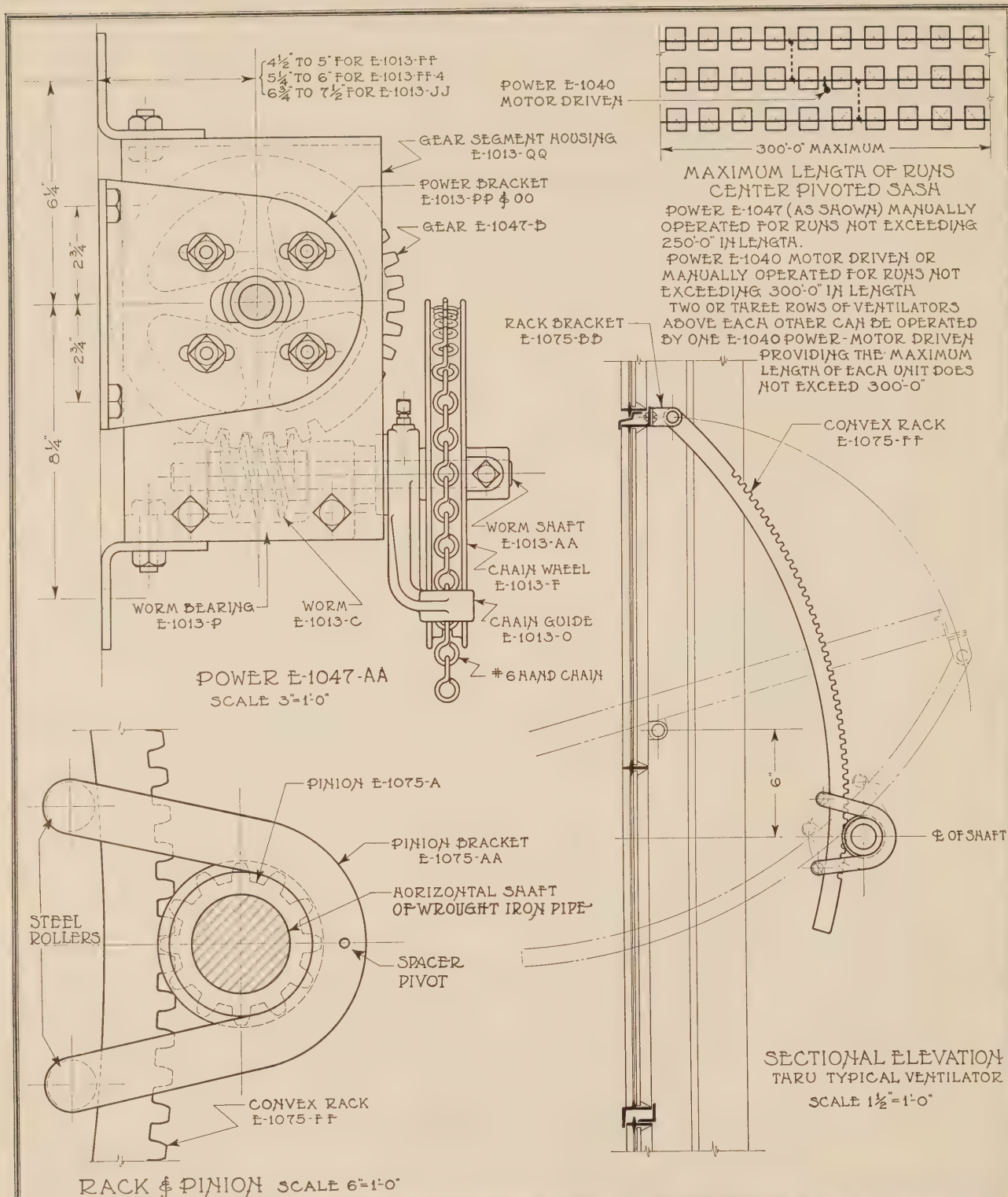
- 14 All exposed parts of operators shall be given shop coat of steel protective paint by the manufacturer before shipment. After erection, all operating parts shall be painted by the painting contractor as specified.

Erection

- 15 All operators shall be erected by the manufacturer or other approved erector before any glazing is started. All ventilators must be adjusted before lever arms are attached, and tried to insure free opening and tight closing. All operating devices are to be left in complete working order.

**These Specifications cover
Drafting Room Standard**

F-14 (page 74)

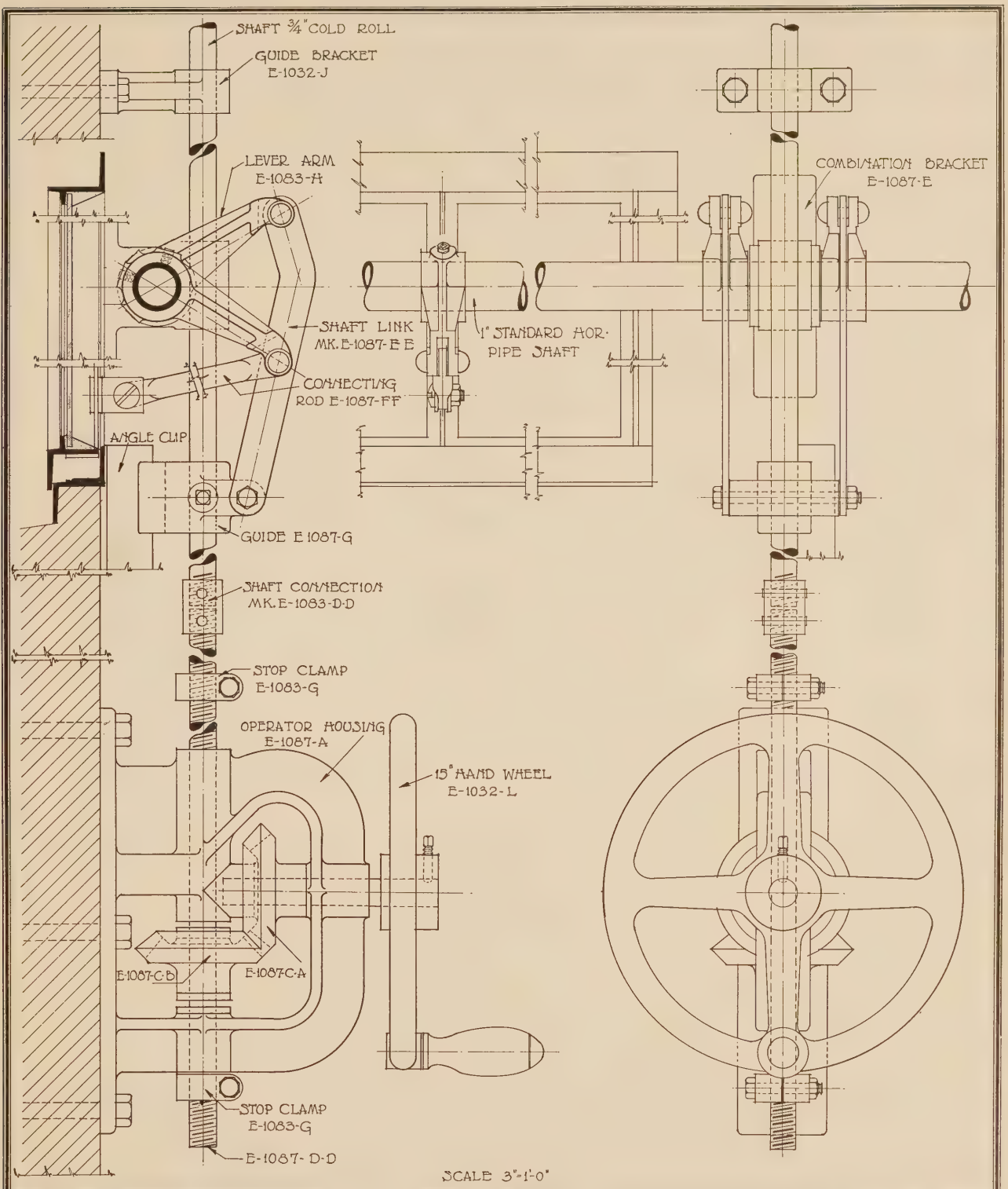


TRUSCON
STEEL WINDOWS

• OPERATOR FOR LONG RUNS OF STANDARD WINDOWS •
TRUSCON RACK & PINION OPERATOR
 TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

F-14
JULY-1928



TRUSCON
STEEL WINDOWS

• PRISON TYPE •
TRUSCON TORSION OPERATOR
TRUSCON STEEL COMPANY
YOUNGSTOWN OHIO

F-11
JULY-1928

SCHEDULE OF MECHANICAL OPERATORS

Showing Application of Powers, Length of Run and Method of Operating

Power	Shaft	Operator	Max. No. of Vents in Run	Maximum Run in Feet	Opening Angle	Method of Operating
Type "A" E-1013	Pipe	Torsion Lever Arm	3 x 2 Lt.—24 4 x 2 Lt.—16	100' (120') 80'	60°	Manual Cont. Chain
Group Control E-1013			2 Rows { 8 Lt. Vents 8 each row	40'-0" each row	60°	Manual
			2 Rows { 6 Lt. Vents 12 each row	60'-0" each row	60°	Manual
			3 Rows { 8 Lt. Vents 5 each row	26'-8" each row	60°	Manual
			3 Rows { 6 Lt. Vents 8 each row	40'-0" each row	60°	Manual
Type "AA"	Power and	Operator as for	Type "A" E-1013	Horizontal hand wheel attached to lower end of vertical shaft. Vertical hand wheel and a pair of mitre gears. Combination of vertical shaft and continuous chain. Vertical hand wheel with mitre gears in an oil tight case.		
Type "AB"						
Type "AC"						
Type "AD"						
Type "B" E-1040	Pipe to 100'— Cold rolled shafting above	Torsion (Heavy Duty) Lever Arm	3 x 2 Lt.—32 4 x 2 Lt.—24	220' 150'	60°	Manual Cont. Chain
Type "C" E-1040	1" Extra Heavy Pipe	Rack and pinion	For top hinged or projected vents	130'	60°	Manual
E-1082	1" Ø Pipe	Rack and pinion	For horizontally pivoted vents	100'	60°	Manual
E-1047	1" Ø Pipe	Rack and pinion		200'	60°	Manual
E-1040	1½" Solid	Rack and pinion		300'	60°	Motor
Type "G" E-1000	Horizontal shaft and return rod	Tension Toggle lever arm	3000 lbs. maximum tension pull		3'-45°-28" 4'-45°-37" 5'-40°-41" 6'-35°-42"	Manual
E-1000 "GM"	Horizontal shaft and return rod	Tension Toggle lever arm	3000 lbs. maximum tension pull		Same	Motor
Type "EM" E-1002	Horizontal shaft and return rod	Tension Toggle lever arm	4500 lbs. maximum tension pull		Same	Motor
E-1028 "DM"	2-Way Horiz. shaft and return rod	Tension Toggle lever arm	7000 lbs. maximum tension pull		Same	Motor
E-1089 "DM"	2-Way Horiz. shaft and return rod		4500 lbs. maximum tension pull		Same	Motor
Prison Type E-1087	Screw Type	Torsion Lever arm	With slight change of Vert. screw this operator can be motorized	350'	90°	Manual

Maximum Tension Pull in Pounds per Lineal Foot of Sash

Height of Sash	Sash vertical or inclined when closed							
	Vertical	5°	10°	15°	20°	25°	30°	35°
3'-0"	11.31	12.26	13.11	13.86	14.50	15.04	15.45	15.76
4'-0"	13.20	14.30	15.29	16.17	16.92	17.55	18.02	18.39
5'-0"	15.00	16.50	17.87	19.12	20.21	21.15	21.93	22.54
6'-0"	16.06	18.00	19.80	21.45	22.93	24.25	25.38	26.31

*Example—Height of sash 5'-0". Sash set at an angle of 30° in closed position. Length of run 120'-0". Tension pull at each end = 120 x 21.93 = 2631.6 lbs.

SPACINGS OF OPERATOR ARMS FOR CONTINUOUS WINDOWS

Type of Arm	Heights of Windows			
	3'	4'	5'	6'
Toggle Lever Arms.....	(One for every 40 Sq. Ft. of Sash)			
Rack and Pinion—One for Every.....	8 Lin. Ft.	7 Lin. Ft.	6 Lin. Ft.	5 Lin. Ft.

TRUSCON PRESSED STEEL FRAMES

SPECIFICATIONS

General

- 1 All frames, unless otherwise specified, shall be pressed steel frames as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution will be allowed without the written consent and approval of the architect.

Material

- 2 Steel sheets used in the manufacture of frames shall be cold rolled No. 11 gauge, full pickled, re-annealed steel of U. S. Standard gauge and patent leveled.

Construction

- 3 All shop joints shall be continuous welded and ground smooth.
- 4 Where horizontal field splices are necessary, they shall be made above or below a horizontal mullion. An inside splice fitting the vertical mullion shall be shop welded on one section, the splice to project out, allowing the other section to be driven over the splice form with a driving fit.

- 5 Where vertical field splices are required, the entire frame is spliced along a single vertical line the center line of a vertical mullion. The vertical mullion is split and each half is shop welded to the head, sill or horizontal mullion part or parts shipped with it. Mullion cover plates join the two sections of the split vertical mullion in the field. This arrangement of splices allows all corners of the pressed steel frame to be shop welded.

- 6 Head and jambs shall be formed with fin for anchoring into the masonry.

- 7 Where size of frame will permit shipping as a unit, vertical mullions shall be welded throughout.

Painting

- 8 All frames shall be given a coat of protective paint before shipment.

(For paint specifications see plate S-1 page 134.)

Erection

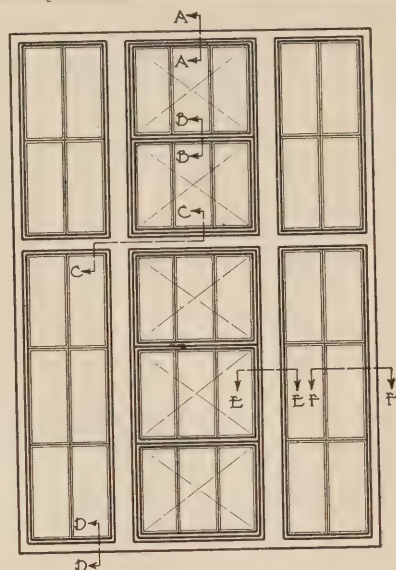
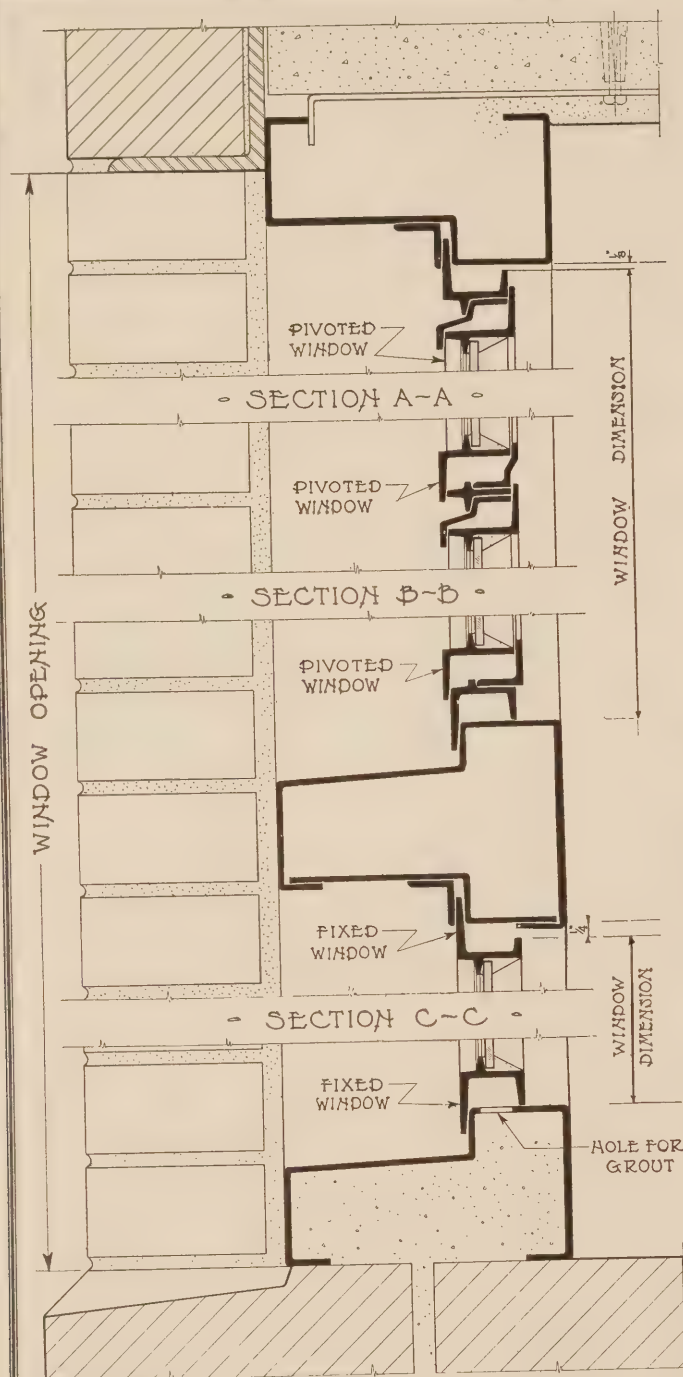
- 9 The erection of frames shall be handled by the manufacturer of same.

**These Specifications cover the following
Drafting Room Standards:**

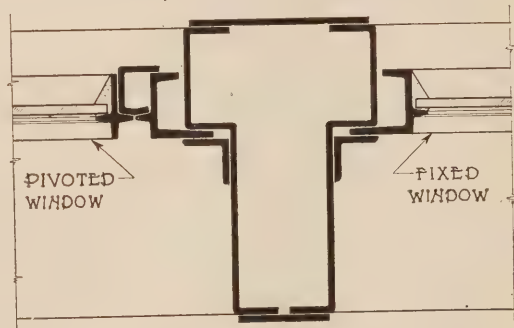
G-1 (page 78)

G-2 (page 79)

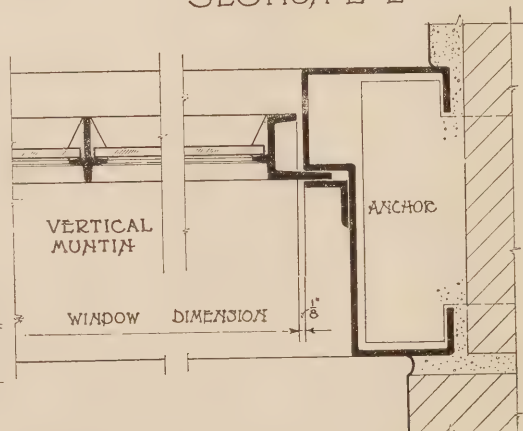
G-3 (page 80)



- TYPICAL EXTERIOR ELEVATION -
VERTICAL AND HORIZONTAL MULLIONS
CAN BE ARRANGED AS DESIRED.



- SECTION E-E -



- SECTION D-D -

FOR PIVOTED OR PROJECTED WINDOWS

- SECTION F-F -

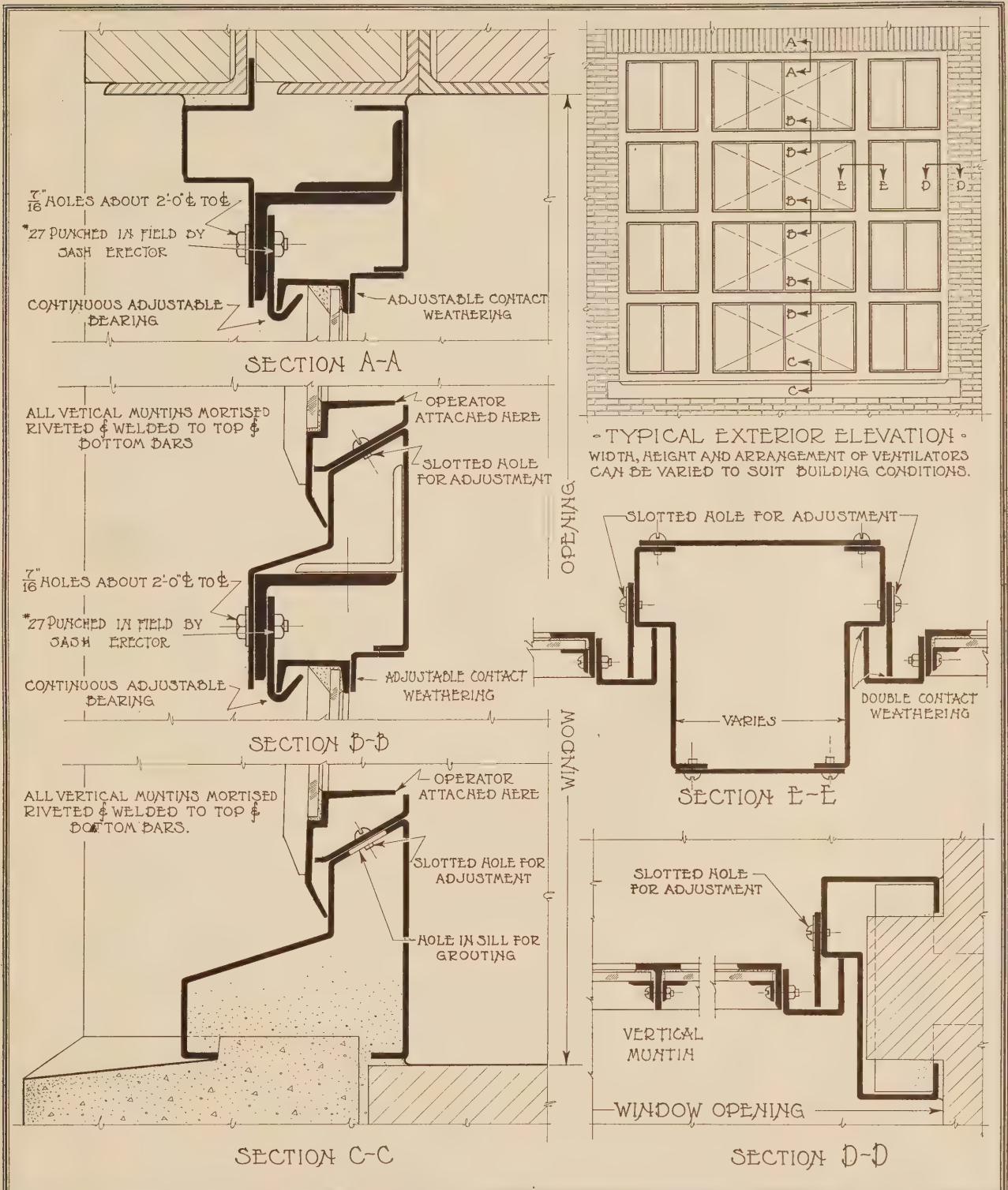
SCALE 3" = 1'-0"

TRUSCON
STEEL WINDOWS

FOR POWER HOUSE AND MONUMENTAL STRUCTURES -
TRUSCON STEEL FRAMES - WITH 210A SECTION
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

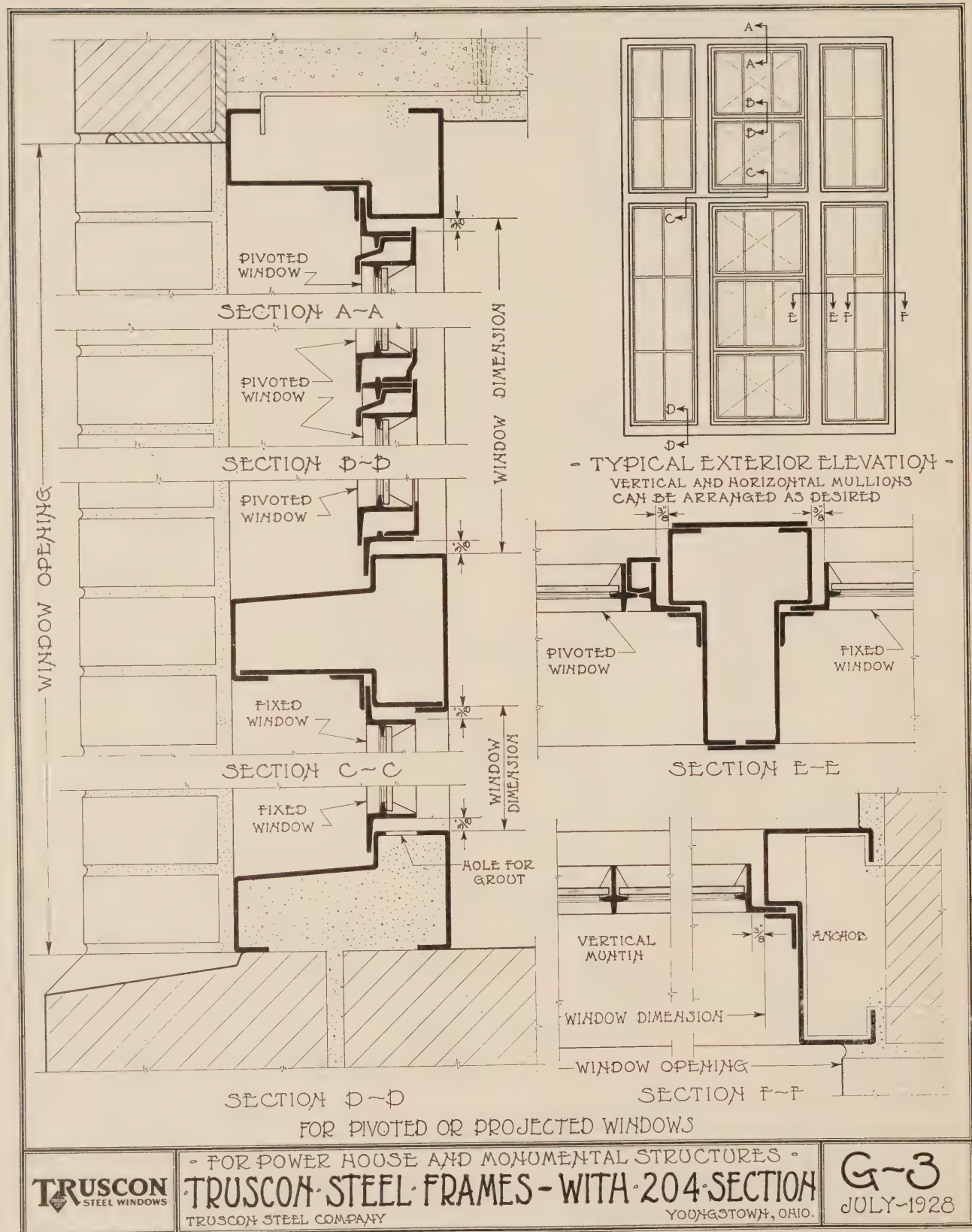
G-1
JULY-1928



TRUSCON
STEEL WINDOWS

• FOR POWER HOUSE AND MONUMENTAL STRUCTURES •
TRUSCON STEEL FRAMES-CONTINUOUS SASH
TRUSCON STEEL COMPANY YOUNGSTOWN, OHIO

G-2
JULY-1928



TRUSCON STOCK TYPE STEEL DOORS

SWING AND SLIDE UNITS

SPECIFICATIONS

General

- 1 All doors shown on the drawings as "steel doors", not exceeding 10 feet in height or 5 feet for single, 10 feet for double doors in width, shall be of the stock type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 The stiles, top rail and bottom rail shall be constructed of No. 14 gauge pressed steel tube $3\frac{3}{4}$ " x $1\frac{5}{8}$ ".
- 3 Sash panel included in doors shall be constructed from hot-rolled billet steel.
- 4 The steel panels shall be constructed from cold rolled sheets full pickled, re-annealed and patent leveled.

Construction

- 5 The corners shall be mitered and internally reinforced, the reinforcing extending $8\frac{1}{2}$ " in both directions from the corner.
- 6 All mitre joints shall be face welded and ground smooth.
- 7 The lower portion of the door shall be equipped with steel panels electrically spot welded to the stiles and rails. This plate not to be less than No. 18 gauge in thickness.
- 8 The upper portion of the door shall be fitted with a window frame built up of Truscon standard members spot welded in place. The glass shall be held in place with putty and glazing angles.

Hardware

- 9 Sliding doors shall be hung from double trolleys and shall be provided with guides, handles, stops and hasp staples as shown on the drawings.
- 10 Swinging doors shall be equipped with heavy steel hinges as shown on the drawings.
- 11 All swing doors shall be equipped with Truscon standard mortise cylinder lock or lever latch and padlock brackets.
- 12 Where swing doors are hung in pairs one leaf shall be equipped with foot bolt and spring top bolt.
- 13 With all double swing or double slide doors, an astragal shall be provided by door manufacturer.

Pressed Steel Door Frames

- 14 All stock doors shall be provided with a pressed steel door frame. Unless otherwise specified, these frames shall be supplied by the door manufacturer.
- 15 Door frames are to be constructed of No. 14 gauge steel formed to shape as shown on Truscon Standards.
- 16 Frame shall be either fastened directly to the structural steel or shall have anchors built into the masonry. The frame regardless of Jamb anchorage shall extend 3" below finished floor line.

Painting

- 17 All doors shall receive one brush coat of red oxide of iron paint before shipment.

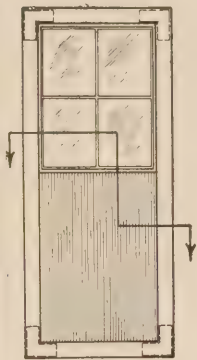
Erection

- 18 The erection of all doors furnished in combination with steel window contracts shall be handled by manufacturer of same.

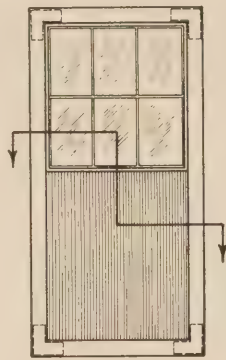
These Specifications cover Drafting Room Standard

J-1 (page 82) J-2 (page 83)

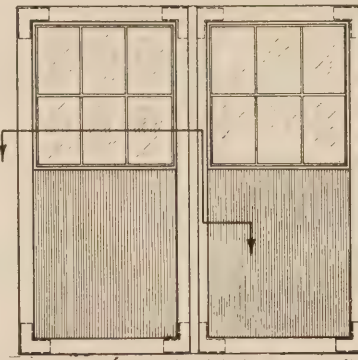
J-5 (page 84) J-6 (page 85)



No 37 & No 38



No 48 & No 510



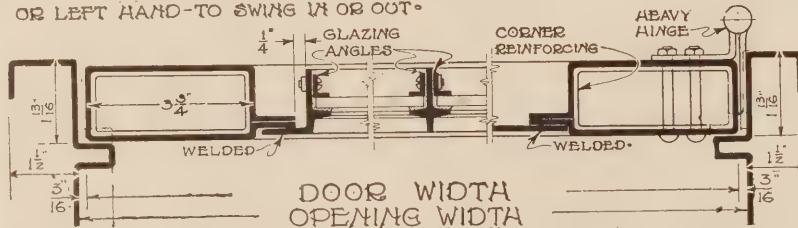
No 67 & No 68 (FOUR LIGHTS) No 88 & No 1010

• SINGLE SWING •

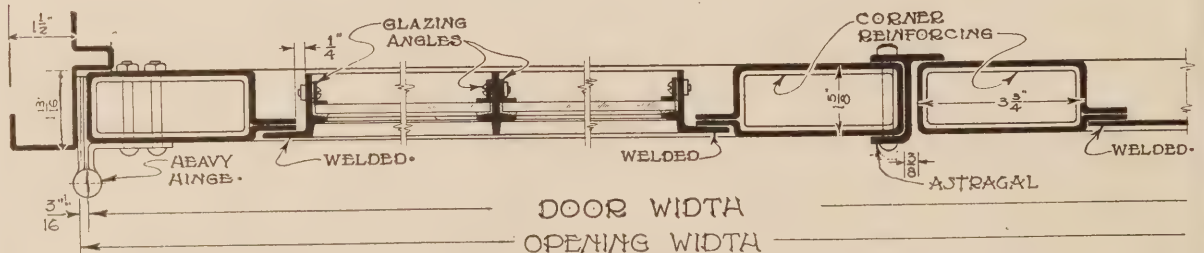
• DOUBLE SWING •

STOCK SIZES					
DOOR NO	SIZE OF DOOR		SIZE OF OPENING		GLASS SIZE
	WIDTH	HEIGHT	WIDTH	HEIGHT	
SINGLE SWING					
37	3'-0"	7'-0"	3'-0 3/8"	7'-0 3/4"	12 3/4" x 18"
38	3'-2 3/8"	7'-9"	3'-2 3/4"	7'-9 3/4"	14" x 18"
48	3'-10 3/4"	7'-9"	3'-11 1/8"	7'-9 3/4"	12" x 18"
510	4'-10 3/4"	9'-9"	4'-11 1/8"	9'-9 3/4"	16" x 22"
DOUBLE SWING					
67	6'-0 3/8"	7'-0"	6'-0 3/4"	7'-0 3/4"	12 3/4" x 18"
68	6'-5 1/8"	7'-9"	6'-5 1/2"	7'-9 3/4"	14" x 18"
88	7'-9 3/8"	7'-9"	7'-10 1/4"	7'-9 3/4"	12" x 18"
1010	9'-9 3/8"	9'-9"	9'-10 1/4"	9'-9 3/4"	16" x 22"

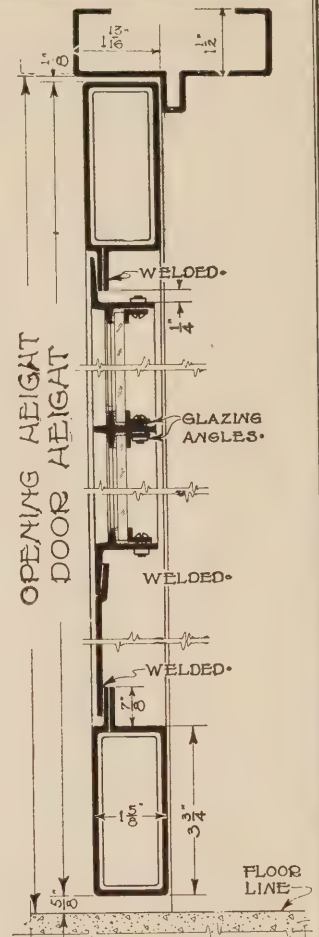
ALWAYS STATE WHETHER DOORS ARE RIGHT OR LEFT HAND-TO SWING IN OR OUT.



• HORIZONTAL SECTION THRU SINGLE SWING DOOR •
(OPEN IN)



• HORIZONTAL SECTION THRU DOUBLE SWING DOOR •
(OPEN OUT)



• TYPICAL •
• VERTICAL SECTION •
FOR
SINGLE AND DOUBLE
• SWING DOORS •

-NOTES-

BY FITTING THE LEAVES WITH THE PROPER TYPE AND ARRANGEMENT OF HARDWARE THEY MAY BE USED FOR SINGLE OR DOUBLE SWING DOORS.

FOR HARDWARE SEE PLATE J-5
ALL DOORS ARE FURNISHED WITH-
OUT GLASS- 3/8" x 1/2" CONTINUOUS
GLAZING ANGLES ARE SUPPLIED
FOR ALL DOOR LIGHTS.

ALL TRUSCON DOORS ARE HEAVILY
REINFORCED AT CORNERS.

DOORS MAY ALSO BE FURNISHED
WITH SOLID STEEL PANELS.

TRUSCON
STEEL DOORS

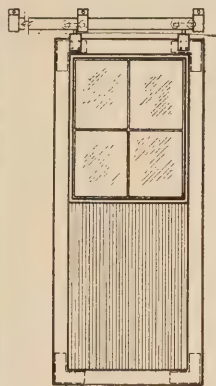
• STOCK SIZES • - SWING TYPES •
TRUSCON STOCK DOORS
TRUSCON STEEL COMPANY •

YOUNGSTOWN, OHIO.

J-1
JULY-1928

TRACK CAN BE OBTAINED IN LENGTHS OF 6'-0", 8'-0" & 10'-0"

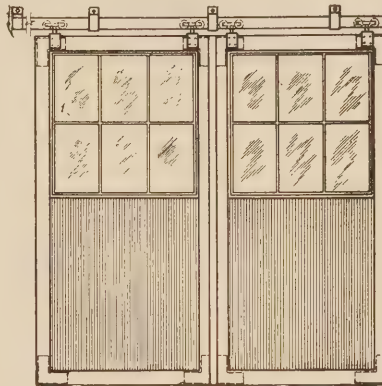
• LENGTH OF TRACK ABOUT TWICE THE WIDTH OF DOORS •



№37 & №38



№48 & №510



№67 & №68 (FOUR LIGHTS) №88 & №1010

SINGLE SLIDE SINGLE SLIDE

DOUBLE SLIDE

STOCK SIZES					
DOOR №	SIZE OF DOOR		SIZE OF OPENING		GLASS SIZES
	WIDTH	HEIGHT	WIDTH	HEIGHT	
SINGLE SLIDE					
37	3'-0"	7'-0"	2'-9"	6'-11 $\frac{1}{4}$ "	12 $\frac{3}{4}$ x 18"
38	3'-2 $\frac{3}{8}$ "	7'-9"	2'-11 $\frac{3}{8}$ "	7'-8 $\frac{1}{4}$ "	14" x 18"
48	3'-10 $\frac{3}{4}$ "	7'-9"	3'-7 $\frac{3}{4}$ "	7'-8 $\frac{1}{4}$ "	12" x 18"
510	4'-10 $\frac{3}{4}$ "	9'-9"	4'-7 $\frac{3}{4}$ "	9'-8 $\frac{1}{4}$ "	16" x 22"
DOUBLE SLIDE					
67	6'-0 $\frac{3}{8}$ "	7'-0"	5'-9 $\frac{3}{8}$ "	6'-11 $\frac{1}{4}$ "	12 $\frac{3}{4}$ x 18"
68	6'-5 $\frac{1}{8}$ "	7'-9"	6'-2 $\frac{1}{8}$ "	7'-8 $\frac{1}{4}$ "	14" x 18"
88	7'-9 $\frac{3}{8}$ "	7'-9"	7'-6 $\frac{3}{8}$ "	7'-8 $\frac{1}{4}$ "	12" x 18"
1010	9'-9 $\frac{3}{8}$ "	9'-9"	9'-6 $\frac{3}{8}$ "	9'-8 $\frac{1}{4}$ "	16" x 22"

—NOTES—

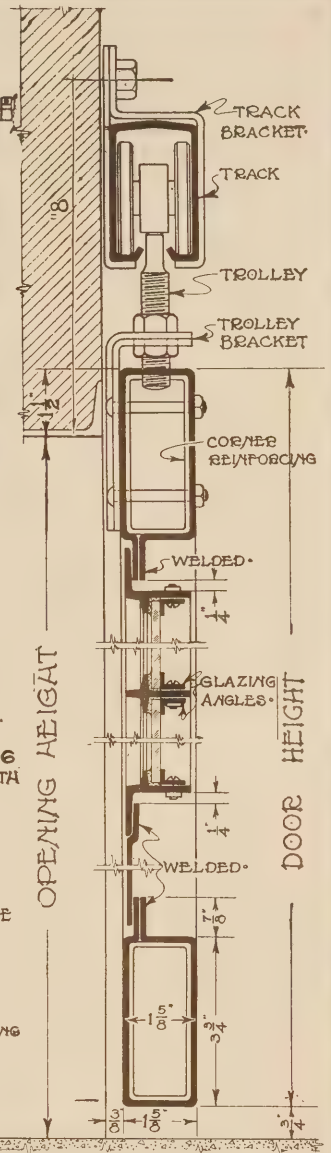
ALL DOORS ARE FURNISHED WITH
OUT GLASS, — $\frac{3}{8}$ x $\frac{1}{2}$ CONTINUOUS
GLAZING ANGLES ARE SUPPLIED
FOR ALL DOOR LIGHTS.

ALL TRUSCON DOORS ARE
HEAVILY REINFORCED AT CORNERS.

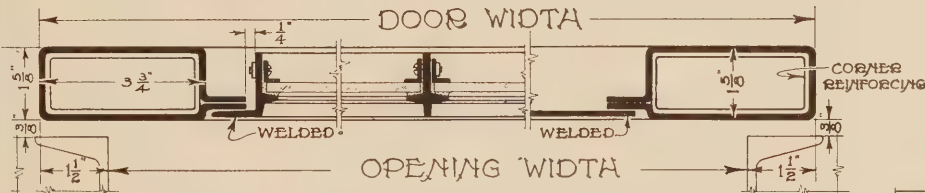
DOORS ARE EQUIPPED WITH SUITABLE
HARDWARE—FOR DETAILS SEE PLATE J-6
DOORS MAY ALSO BE FURNISHED WITH
SOLID STEEL PANELS.

WHEN TRACK IS ON EXTERIOR OF
WALL FLASHING IS FURNISHED BY
OTHERS

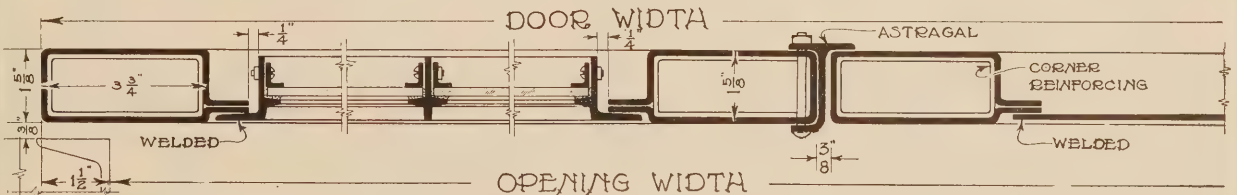
TWO OR MORE UNITS MAY BE
UNITED INTO SINGLE LEAVES FOR
WIDER OPENINGS THAN SHOWN IN THE
TABLE.



•TYPICAL
•VERTICAL SECTION•



•HORIZONTAL SECTION THRU SINGLE SLIDE DOOR•



•HORIZONTAL SECTION THRU DOUBLE SLIDE DOOR•

•SCALE 3"=1'-0"•

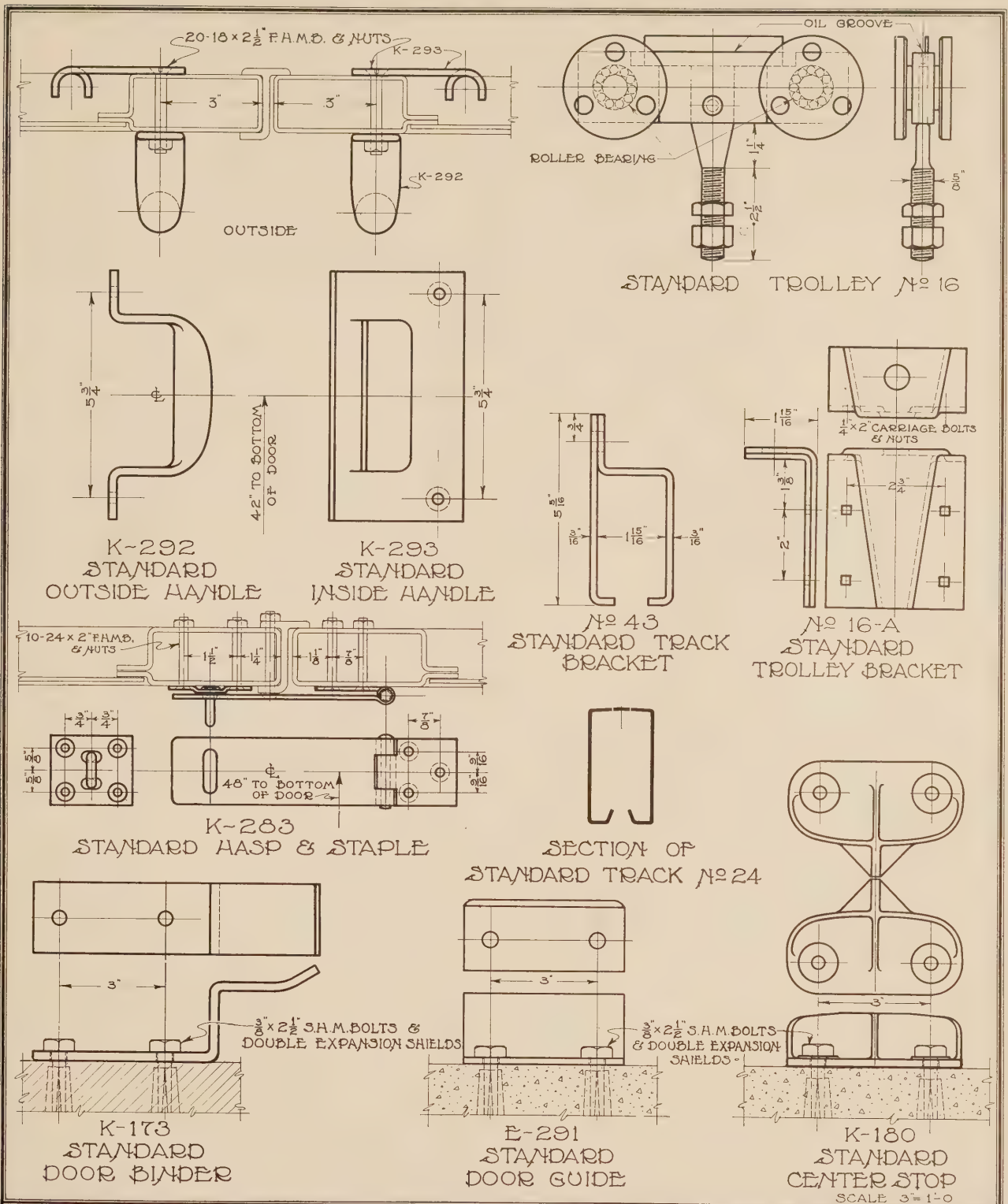
TRUSCON
STEEL DOORS

•STOCK SIZES—SLIDE TYPES•
TRUSCON STOCK DOORS

TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

J-2
DEC-1928



TRUSCON
STEEL DOORS

DETAILS OF STANDARD HARDWARE—SLIDE DOORS—
TRUSCON STOCK DOORS
TRUSCON STEEL COMPANY YOUNGSTOWN, OHIO.

J-6
JULY-1928

TRUSCON INDUSTRIAL STEEL DOORS FOR LARGE OPENINGS

SWING AND SLIDE UNITS SEAMLESS TUBULAR RAIL

SPECIFICATIONS

General

- 1 All doors, over ten feet in height or five feet single, 10 feet double, in width, shown on the drawings as "tubular steel doors", shall be Industrial Doors of the heavy tubular rail type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All stiles and rails shall be constructed from hot drawn seamless steel tubing.
- 3 All windows included in doors shall be constructed from hot-rolled billet steel.

Construction

- 4 The stiles, top rail, cross rails and bottom rail, shall be constructed of No. 13 gauge seamless steel tubing, 4" x 2½".
- 5 The corner shall be mitered and internally reinforced, the reinforcing extending 8½" in both directions from the corners. All miter joints shall be welded and ground smooth.
- 6 The lower portion of the doors shall be fitted with a No. 16 gauge steel panel bolted in place.
- 7 The upper portion of the door shall be fitted with window built up of Truscon standard members and glazed with glass lights as shown on the drawings. The glass shall be held in place with putty and glazing angles.

Frames

- 8 Where shown on the drawings, steel channel frames for all door openings shall be furnished and installed by the contractor supplying structural steel.

Hardware

- 9 Sliding doors shall be hung from Truscon Standard double trolleys and heavy channel track and shall be equipped with flange guides, back stops, binders, etc.
- 10 Swinging doors shall be equipped with Truscon Standard heavy steel hinges.
- 11 All swing doors shall be equipped with Truscon Standard mortise cylinder locks (or lever latch and padlock brackets) and heavy handles on inside and out.
- 12 Where doors are hung in pairs, one leaf shall be equipped with Truscon Standard foot bolt and chain bolt.
- 13 An astragal shall be provided by door manufacturer with all double swing or double slide doors.

Painting

- 14 All doors shall receive one brush coat of red oxide of iron paint before shipment.

Erection

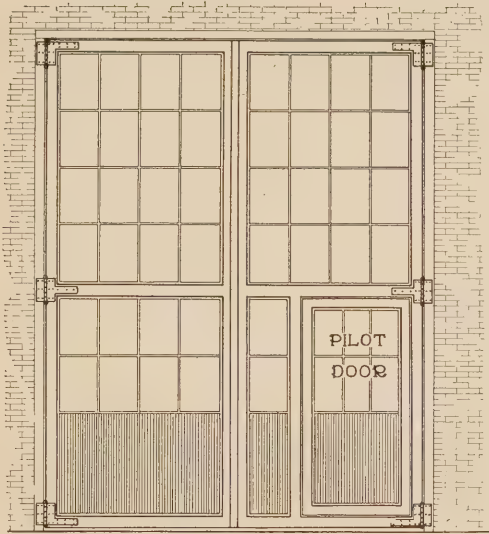
- 15 The erection of doors furnished in combination with steel window contracts shall be handled by the manufacturer of same.

These Specifications cover the following
Drafting Room Standards:

J-3 (page 87)

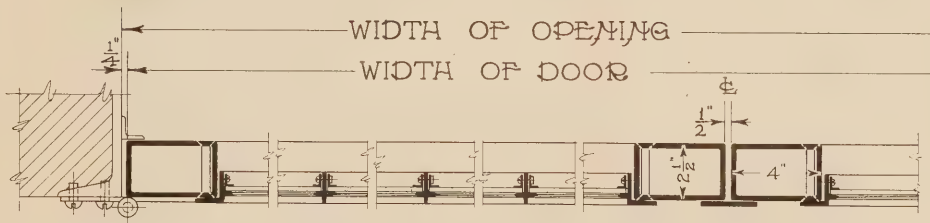
J-4 (page 88)

J-14 (page 89)

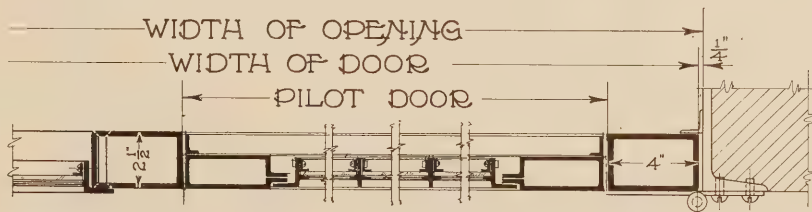


• TYPICAL ELEVATION •

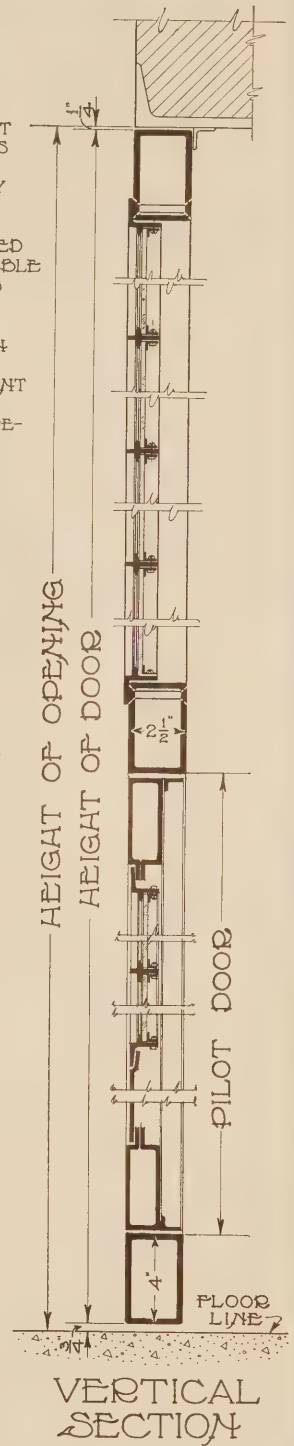
~NOTES~
 THIS TYPE OF DOOR SHOULD NOT BE SPECIFIED FOR OPENINGS LESS THAN 10 FT. HIGH OR 10 FT. WIDE.
 FOR SMALLER OPENINGS SPECIFY STANDARD TYPES SHOWN ON PLATES J-1 & J-2.
 PILOT DOORS SHOULD BE AVOIDED IN SWING UNITS WHEREVER POSSIBLE AND SET IN ADJACENT WALLS AS SEPARATE UNITS.
 WHEN ORDERING ALWAYS SPECIFY WHETHER DOORS ARE TO SWING IN OR OUT.
 SIZE OF LIGHTS AND ARRANGEMENT OF MUNTIN BARS AND MULLIONS CAN BE VARIED TO MEET REQUIREMENTS.



• HORIZONTAL SECTION •
 • THRU LEFT HALF OF DOOR •



• HORIZONTAL SECTION •
 • THRU PILOT DOOR •



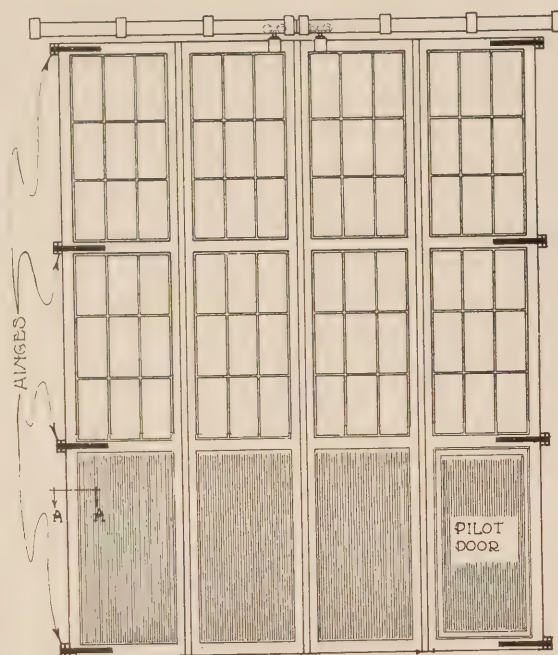
VERTICAL SECTION

SCALE $1\frac{1}{2}'' = 1'-0''$

TRUSCON
 STANDARD
 INDUSTRIAL DOORS

SEAMLESS TUBULAR RAIL — SWING TYPE
TRUSCON INDUSTRIAL STEEL DOORS
 TRUSCON STEEL COMPANY YOUNGSTOWN, OHIO.

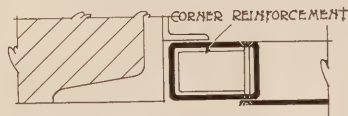
J-3
 JULY-1928



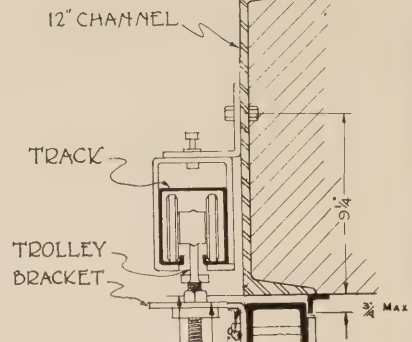
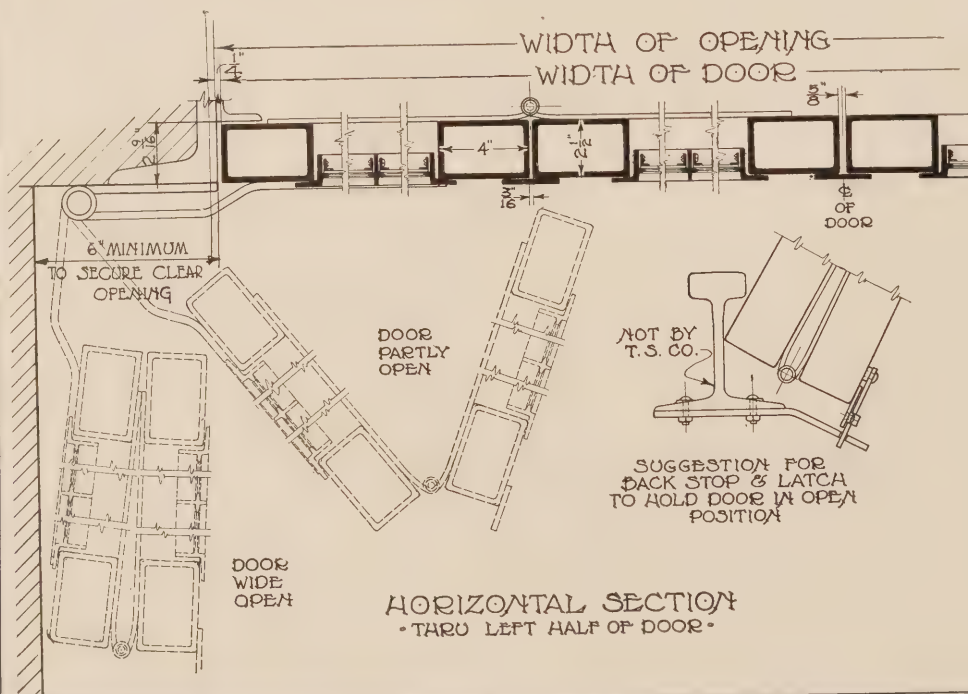
• TYPICAL ELEVATION •
• SHOWING •
• PILOT DOOR •

~NOTES~

ALL DOORS ARE FURNISHED WITH-
OUT GLASS. - $\frac{3}{8} \times \frac{1}{2}$ CONTINUOUS
GLAZING ANGLES ARE SUPPLIED
FOR ALL DOOR LIGHTS
DOORS ARE EQUIPPED WITH
SUITABLE HARDWARE.



• SEC-AA •



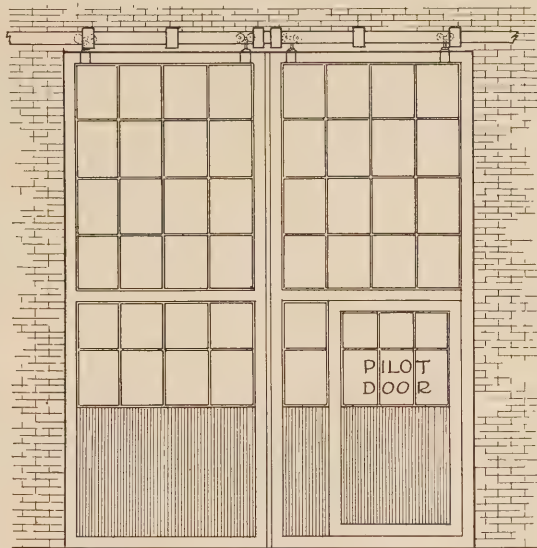
VERTICAL SECTION

SCALE $1\frac{1}{2}$ "-1'-0"

TRUSCON
STANDARD
INDUSTRIAL DOORS

SEAMLESS TUBULAR RAIL TYPE~FOR LARGE OPENINGS
TRUSCON RAILROAD TYPE DOORS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO.

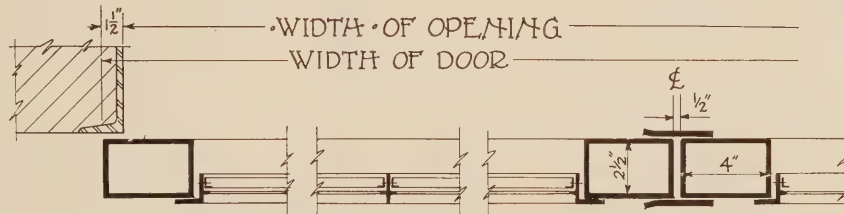
J-4
DEC-1928



•TYPICAL • ELEVATION•

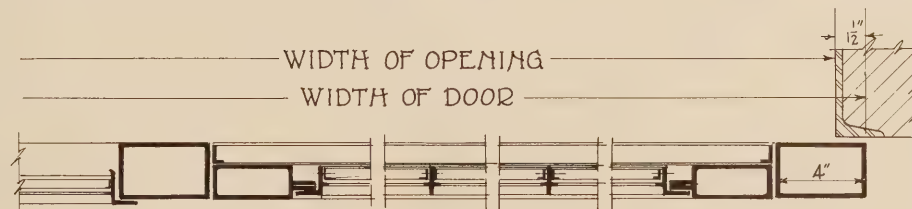
•NOTES•

THIS TYPE OF DOOR SHOULD NOT BE SPECIFIED FOR OPENINGS LESS THAN 10 FT. HIGH OR 10 FT. WIDE. FOR SMALLER OPENINGS SPECIFY STANDARD TYPES SHOWN ON PLATES J-1 & J-2. PILOT DOORS CAN BE PROVIDED WHEREVER NECESSARY. WHEN ORDERING ALWAYS SPECIFY WHETHER DOORS ARE INSIDE OR OUTSIDE. SIZE OF LIGHTS AND ARRANGEMENT OF MUNTIN BARS AND MULLIONS CAN BE VARIED TO MEET REQUIREMENTS.



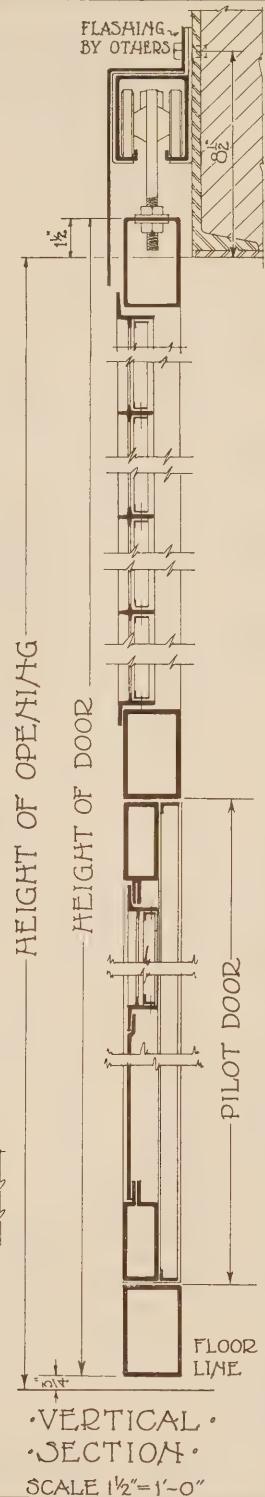
•HORIZONTAL • SECTION•

•THRU LEFT HALF OF DOOR•



•HORIZONTAL • SECTION•

•THRU PILOT DOOR•



•VERTICAL • SECTION•

SCALE 1 1/2" = 1'-0"

TRUSCON
STEEL DOORS

•SEAMLESS TUBULAR RAIL — SLIDE TYPE
•TRUSCON • INDUSTRIAL • STEEL • DOOR•
TRUSCON STEEL COMPANY YOUNGSTOWN OHIO

J-14
APRIL 1929

TRUSCON FIRE DEPARTMENT STEEL DOORS SEAMLESS TUBULAR RAIL

SPECIFICATIONS

General

- 1 All doors shown on the drawings as "Fire Department Doors" shall be of heavy tubular rail type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without written consent and approval of the architect.

Material

- 2 All stiles and rails shall be constructed from hot drawn seamless steel tubing.
- 3 All windows included in doors shall be constructed from hot-rolled new billet steel.

Construction

- 4 The stiles, top rail, cross and bottom rails shall be constructed of No. 13 gauge seamless steel tubing, 4" x 2 1/2".
- 5 The corners shall be mitered and internally reinforced, the reinforcing extending 12" in both directions from the corners. All miter joints shall be welded and ground smooth.
- 6 The lower portion of doors shall be fitted with No. 12 gauge steel panels attached by drive screws.
- 7 The upper portion of the doors shall be fitted with windows built up of Truscon standard members and glazed with glass lights as shown on the drawings. The glass shall be held in place with putty and steel glazing angles.

- 8 The structural steel channel frame to support the door is to be furnished and erected by the structural steel contractor.

Hardware

- 9 Double swing doors shall be equipped with Truscon standard heavy steel hinges.
- 10 Vertical folding doors shall be hung from Truscon standard double trolleys and heavy channel track, and shall be equipped with heavy strap hinges extending across entire leaf.
- 11 Astragals shall be provided by door manufacturer with double swing or vertical folding doors.
- 12 Automatic hardware, opening the door quickly by means of heavy coil springs or counter-weights shall be provided by door manufacturer.
- 13 Cremone bolts controlled by pull rope suspended over driver's seat of fire apparatus shall serve as locking device and release of door lock for exit of fire apparatus.

Painting

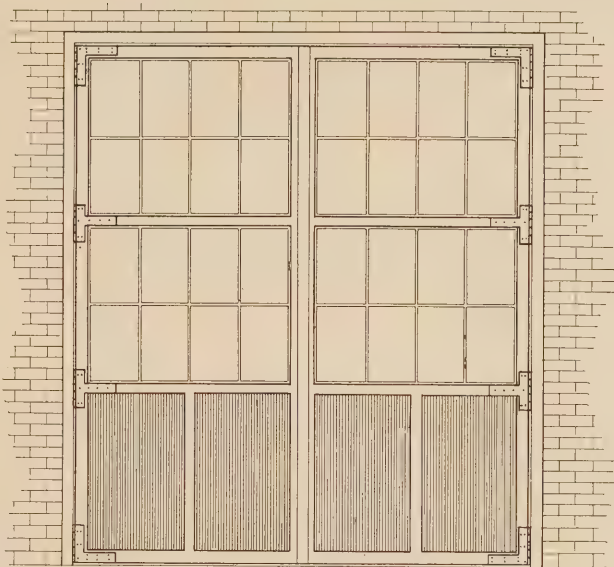
- 14 All doors shall receive one brush coat of red oxide of iron paint, air dried before shipment.

Erection

- 15 The erection of doors furnished in combination with steel window contracts shall be handled by the manufacturer of same.

**These Specifications cover
Drafting Room Standard**

J-9 (page 91)



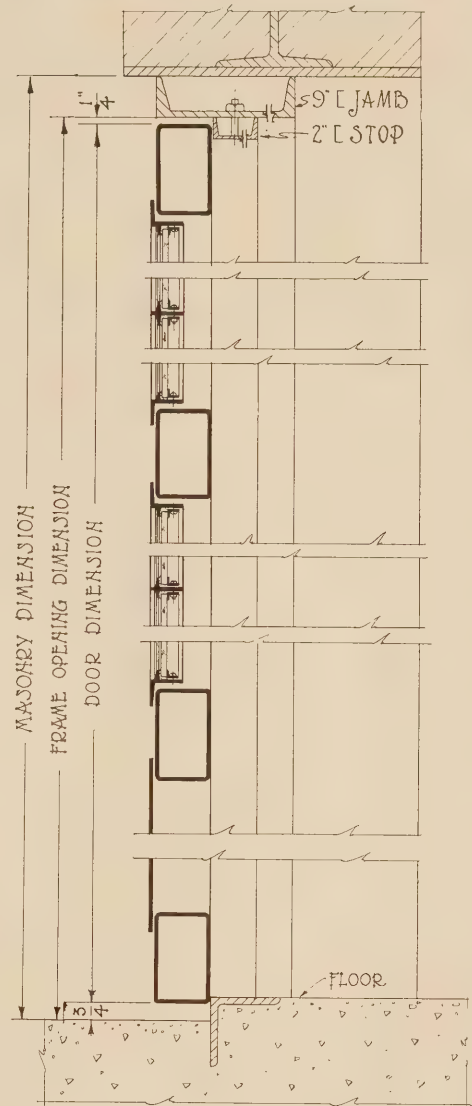
• TYPICAL • ELEVATION •

NOTE

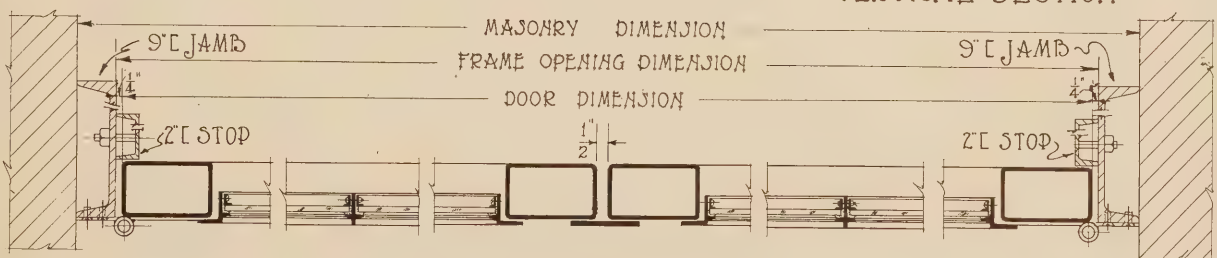
ALL DOORS ARE FURNISHED WITHOUT GLASS
 $\frac{3}{8}$ " x $\frac{1}{2}$ " CONTINUOUS GLAZING ANGLES ARE SUPPLIED FOR ALL LIGHTS.
 DOORS CAN BE EQUIPPED WITH AUTOMATIC TYPE OF HARDWARE



• DOOR RAIL • HALF • SIZE •



• VERTICAL • SECTION •



• HORIZONTAL • SECTION •

SCALE $\frac{1}{2}$ " = 1'-0"

TRUSCON
STEEL DOORS

• SEAMLESS • TUBULAR • RAIL • TYPE •
• TRUSCON • FIRE • DEPARTMENT • DOORS •
 • TRUSCON • STEEL • COMPANY • • YOUNGSTOWN • OHIO •

J-9

• FEB-1929 •

TRUSCON VERTICAL LIFT STEEL DOORS FOR HEAVY DUTY SPECIFICATIONS

General

- 1 All doors shown on the drawings as Vertical Lift Doors shall be of a heavy tubular rail type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All doors shall be constructed from drawn seamless steel tubing, with additional horizontal and vertical reinforcing members of the same material where required for strength and rigidity.

Construction

- 3 The stiles, top rails, cross rails and bottom rail shall be constructed of No. 13 gauge seamless steel tubing, 4" x 2½".
- 4 The corners shall be mitered and internally reinforced, the reinforcing extending 12" in both directions from the corners. All mitered joints shall be welded and surplus material ground off, giving a smooth finished surface.
- 5 The lower portion of the doors shall be fitted with No. 12 gauge steel panels, attached with round drive screws.
- 6 The upper portion of the door shall be fitted with windows built up of Truscon standard members, not less than 1¼" in depth, with all joints air-hammer

riveted and glazed with glass lights as shown on drawings. The glass shall be held in place with putty and steel glazing angles.

Frames

- 7 The necessary structural steel frame to support the door and operator and to provide for the support of counterweights shall be furnished and erected by the structural steel contractor.

Hardware

- 8 The upper and lower leaf shall be equipped with Truscon extra heavy specially designed hardware.
- 9 The steel guides to carry the vertical travel of door shall be fabricated of structural shapes and furnished by the Truscon Steel Company.

Operators

- 10 Doors shall be equipped with a manually controlled mechanical operating device as manufactured by the Truscon Steel Company, the design of which includes the counterbalancing of the operating at all points.

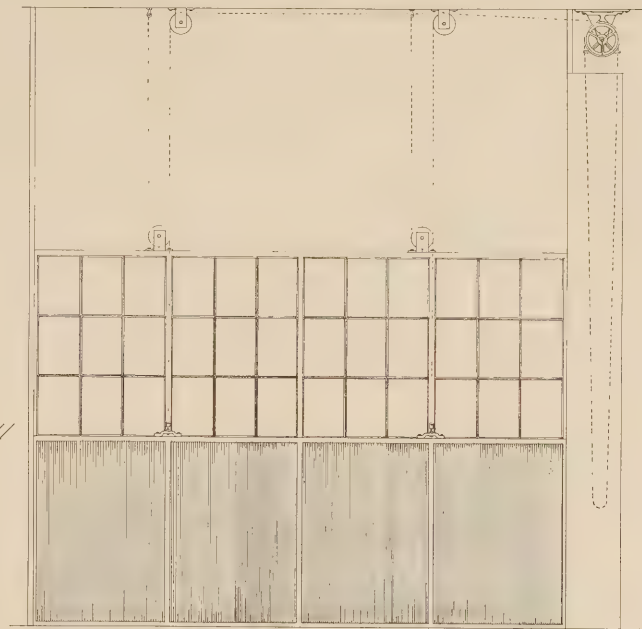
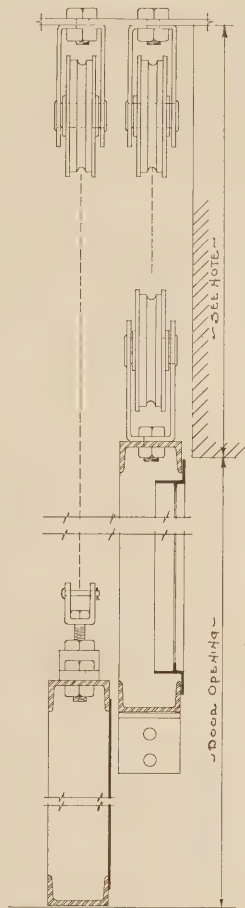
Erection

- 11 Erection of doors and operators shall be done by the door manufacturer.

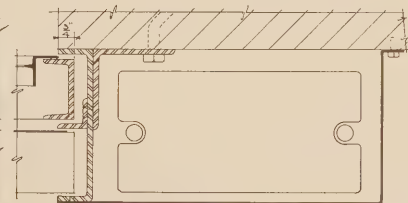
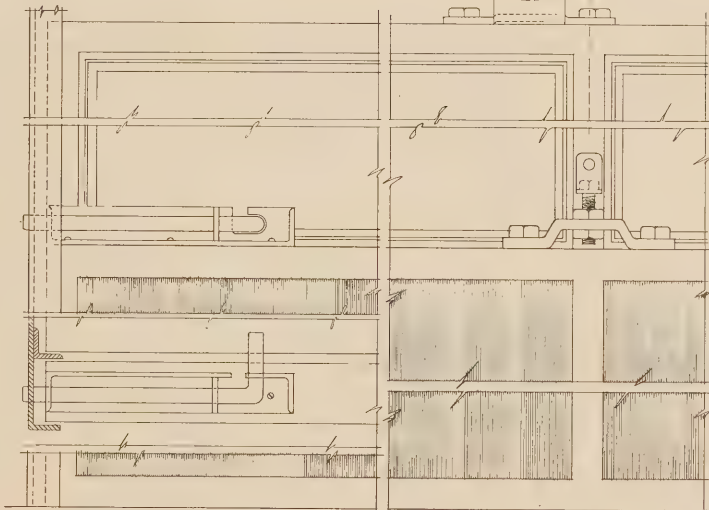
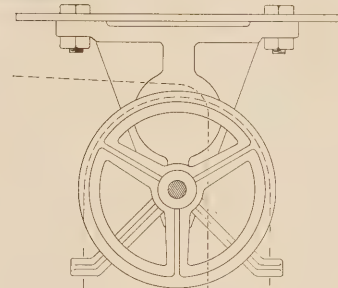
Painting

- 12 All doors shall receive one brush coat of red oxide of iron paint air dried before shipment.

These Specifications cover
Drafting Room Standard
J-10 (page 93)



NOTE:
CLEARANCE NECESSARY FOR
THIS DOOR IS—
ONE HALF HEIGHT OF DOOR
OPENING PLUS 1'-2" ABOVE
DOOR LINTEL.
SUFFICIENT ROOM MUST BE
ALLOWED AT JAMBS FOR
COUNTER WEIGHTS—



TRUSCON
STEEL DOORS

TRUSCON VERTICAL LIFT DOOR
•TRUSCON STEEL COMPANY• •YOUNGSTOWN OHIO•

J-10
•DEC 1928•

TRUSCON VERTICAL LIFT-SWING STEEL DOORS

FOR HEAVY DUTY

SPECIFICATIONS

General

- 1 All doors shown on the drawings as Lift-Swing Doors shall be of a heavy tubular rail type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All doors shall be constructed from drawn seamless steel tubing, with additional horizontal and vertical reinforcing members of the same material where required for strength and rigidity.

Construction

- 3 The stiles, top rail, cross rails and bottom rail shall be constructed of No. 13 gauge seamless steel tubing, 4" x 2 1/2".
- 4 The corners shall be mitered and internally reinforced, the reinforcing extending 12" in both directions from the corners. All mitered joints shall be welded and surplus material ground off, giving a smooth finished surface.
- 5 The lower portion of the doors shall be fitted with No. 12 gauge steel panels, attached with round drive screws.
- 6 The upper portion of the door shall be fitted with windows built up of Truscon standard members, not less than 1 7/8" in depth, with all joints air hammer riveted and glazed with glass lights as shown on drawings. The glass shall be held in place with putty and steel glazing angles.

Frames

- 7 The door manufacturer is to include necessary door guides to carry the vertical travel of the door.
- 8 The necessary structural steel frame to support the door and door operator, and to provide for the counterweights, shall be furnished and erected by the structural steel contractor.

Hardware

- 9 The lower leaf shall be equipped with Truscon extra heavy specially designed hardware. The upper leaf shall be equipped with specially designed Truscon extra heavy steel hinges and guides.

Operators

- 10 Doors shall be equipped with a mechanical operating device as manufactured by the Truscon Steel Company, the design of which includes the counterbalancing of the operation at all points.
- 11 Pilot doors opening inward shall be provided in the lower leaf where indicated, same shall be equipped with Truscon Standard Hardware, either cylinder lock or padlock. All hardware shall be flush on the outside.

Erection

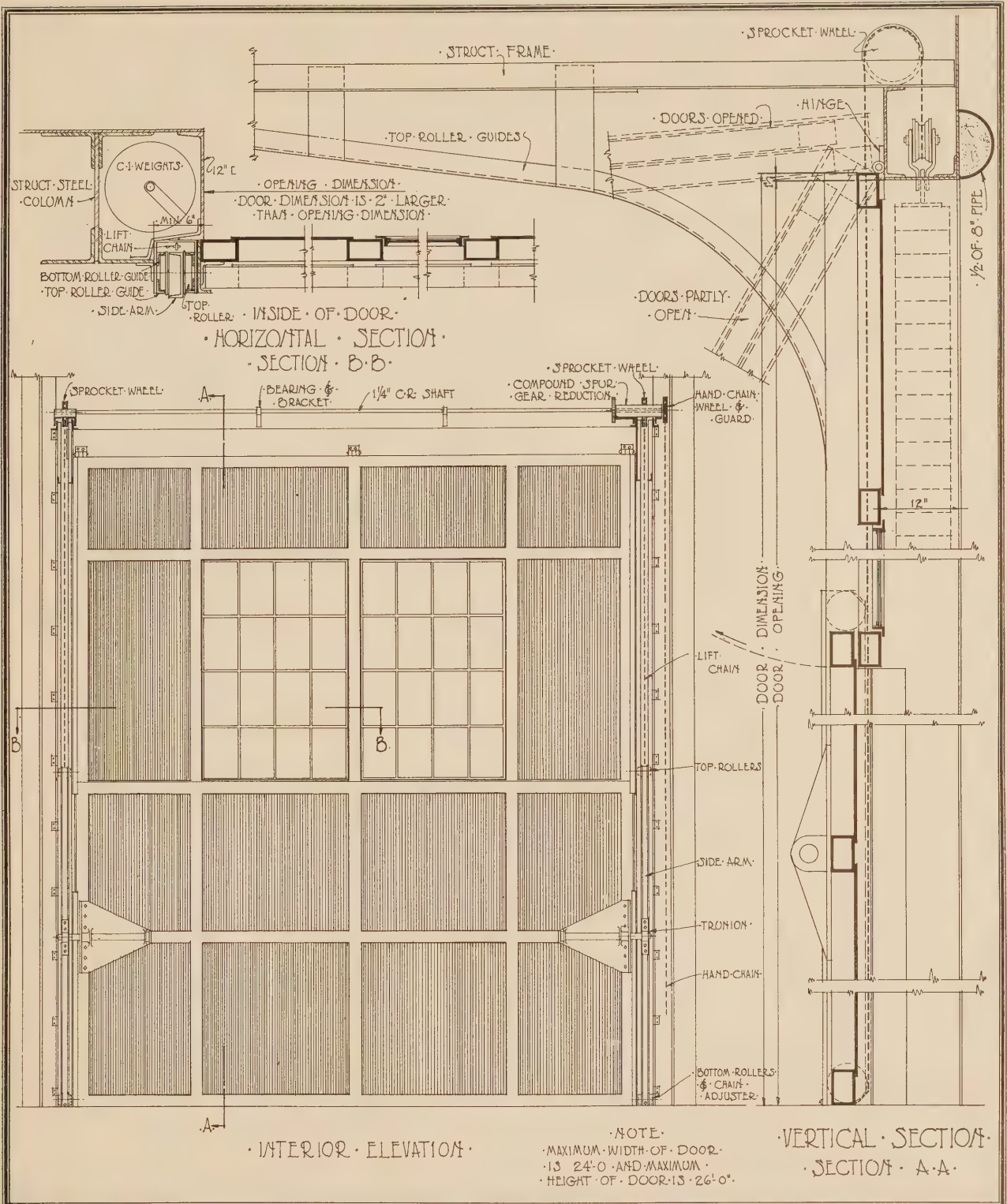
- 12 Doors and operators shall be erected by the door manufacturer.

Painting

- 13 All doors shall receive one brushed coat of red oxide of iron paint air dried before shipment.

These Specifications cover
Drafting Room Standard

J-13 (page 95)



TRUSCON
STEEL DOORS

TRUSCON VERTICAL LIFT-SWING DOORS
TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

J-13
JULY-1928

TRUSCON BIFOLD STEEL DOORS

SPECIFICATIONS

General

- 1 All doors shown and noted on the drawings shall be of the Bifold type of tubular rail doors as manufactured by Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All doors shall be constructed of drawn steel tubing with additional horizontal and vertical tubular reinforcing members where required for strength, rigidity and design.
- 3 All steel windows included in doors shall be constructed from hot rolled new billet steel and in accordance with Truscon Steel Standard Specifications for steel windows. Glass to be held in place by glazing angles.

Construction

- 4 When door leaves do not exceed sixty square feet, with one dimension not exceeding ten feet, the Truscon Standard $3\frac{3}{4}" \times 1\frac{5}{8}"$ type shall be used. If the door leaves exceed these measurements they shall be constructed of No. 13 gauge steel tubing $4" \times 2\frac{1}{2}"$.
- 5 All corners shall be mitered, internally reinforced in both directions and all joints shall be welded and surplus material ground off, leaving a smooth surface.
- 6 The lower panel of the door shall be fitted with either No. 12 or No. 14 gauge steel sheets full pickled, reannealed and patent leveled and attached to steel tube with drive screws.
- 7 The upper panel of the door shall be either fitted with steel windows built up of Truscon Standard members, not less than $1\frac{1}{16}"$ in depth, with all joints air-hammer riveted, and attached to steel tube with drive screws. Glass shall be held in place with putty and steel glazing angles, bolted to the steel window sections.

Hardware

- 8 The hardware used for this type of door has been designed especially for the Truscon Steel Company. The upper leaf is to be attached to the lintel by means of specially designed wrought forged steel hinges. The lower leaf is attached to the upper leaf by hinges of the same design, and also equipped with rollers at each of the lower corners, to which a chain is attached for the operation of the door. Guides are furnished at the jambs so as to take care of the travel of the doors when being operated.

Operators

- 9 A manual operated mechanical power manufactured by Truscon Steel Company is to be furnished together with necessary counter-weights to properly balance the operation of the door at any point.

Frames

- 10 The door manufacturer is to include the necessary door guides to carry the vertical travel of the door.
- 11 The necessary structural steel frame to support the door and door operator and to provide for the support of the counter-weights is to be furnished and erected by the structural steel contractor.

Painting

- 12 All doors shall receive one brushed shop coat of red oxide of iron paint, air-dried before shipment.

Motor Operation

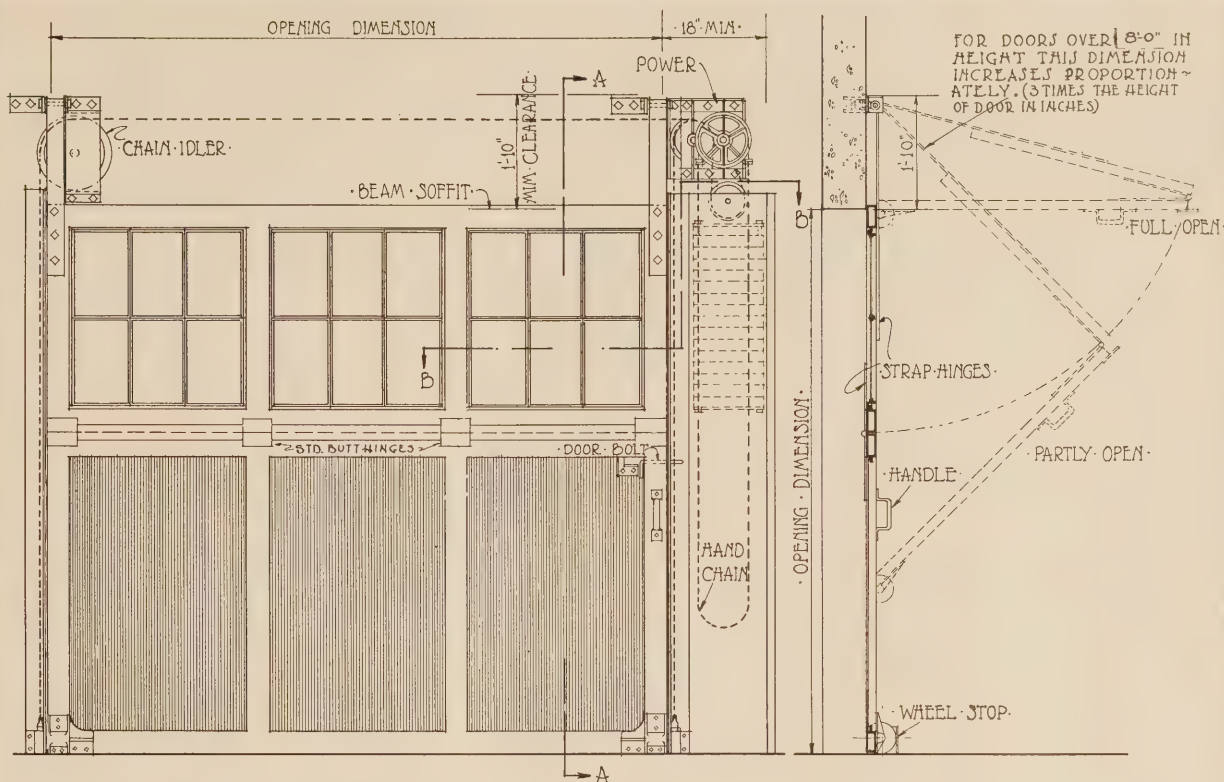
- 13 Where called for on the drawings furnished necessary motors of such size, torque, and speed, together with all necessary stops, limited switches and push button controls necessary for the complete operation of the doors as shown on the drawings.

Erection

- 14 Erection of door in conjunction with the steel sash shall be erected by the door manufacturer.

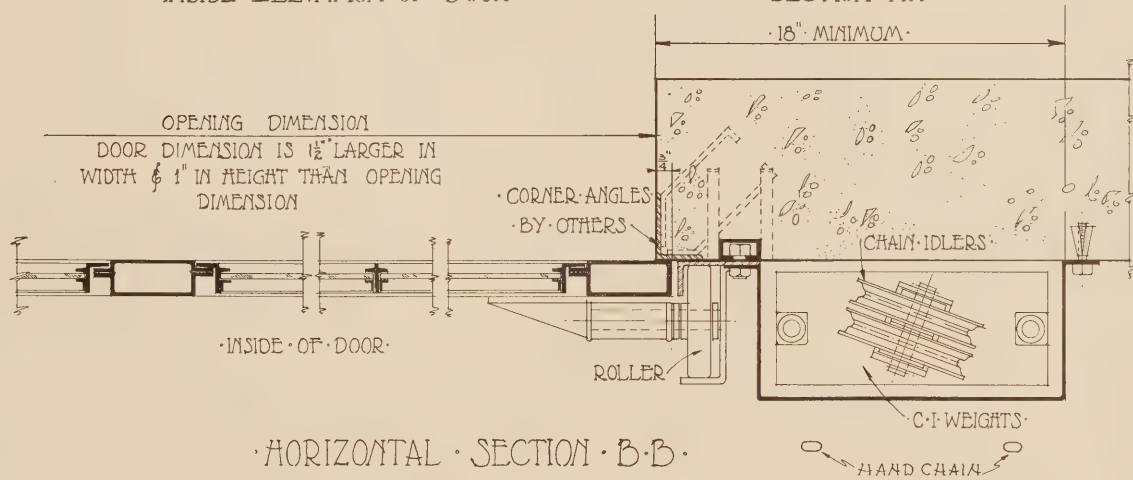
**These Specifications cover
Drafting Room Standard**

J-17 (page 97)



· INSIDE · ELEVATION · OF · DOOR ·

· SECTION · AA ·



· HORIZONTAL · SECTION · B · B ·

· NOTE ·

- DOORS · CAN · BE · FABRICATED · UP · TO · 16'-0" × 12'-0"
- 3 3/4" × 1 5/8" · TUBES · FOR · DOORS · UP · TO · 10'-0" × 10'-0"
- 4" × 2 1/2" " " " " " 16'-0" × 12'-0"

TRUSCON
STEEL DOORS

· TRUSCON · BIFOLD · DOOR ·
· TRUSCON · STEEL · COMPANY ·
· YOUNGSTOWN · OHIO ·

J-17
DEC-1928

TRUSCON AIRPLANE HANGAR STEEL DOORS STRAIGHT SLIDE TYPE

SPECIFICATIONS

General

- 1 All doors shall be of the Straight Track type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All stiles and rails shall be constructed from hot rolled structural steel shapes.
- 3 All sash included in doors shall be constructed from hot rolled new billet steel. All steel panels to be not less than 12-gauge steel and shall be constructed of cold rolled sheets full pickled, reannealed and patent leveled.

Construction

- 4 The stiles, top rail, cross rails and bottom rail shall be constructed of 4" channels.
- 5 The corners shall be coped and neatly fitted. All joints shall be welded and ground smooth. No rivets shall be used in door construction.
- 6 The lower portion of the doors shall be fitted with No. 12 gauge steel panel attached by means of drive screws. One hand hole per door unit shall be recessed in panel.
- 7 The upper portion of the doors shall be fitted with Steel Windows built up of Truscon standard members and glazed with glass lights as shown on the drawings. The glass shall be held in place with putty and steel glazing angles.
- 8 A standard Truscon Pilot door can be provided in lower portion of one door unit if desired.

Hardware

- 9 Sliding doors shall be mounted on cast steel wheels of Truscon size and design, same to be mounted in housing attached to bottom member of door.
- 10 Bronze guides are to be securely attached to head rail of doors to act as guides for doors.
- 11 Each door unit to have one Truscon standard concealed door bolt, and shall be equipped with a flexible astragal held in place with metal strip, tap screwed to door for easy replacement.

Painting

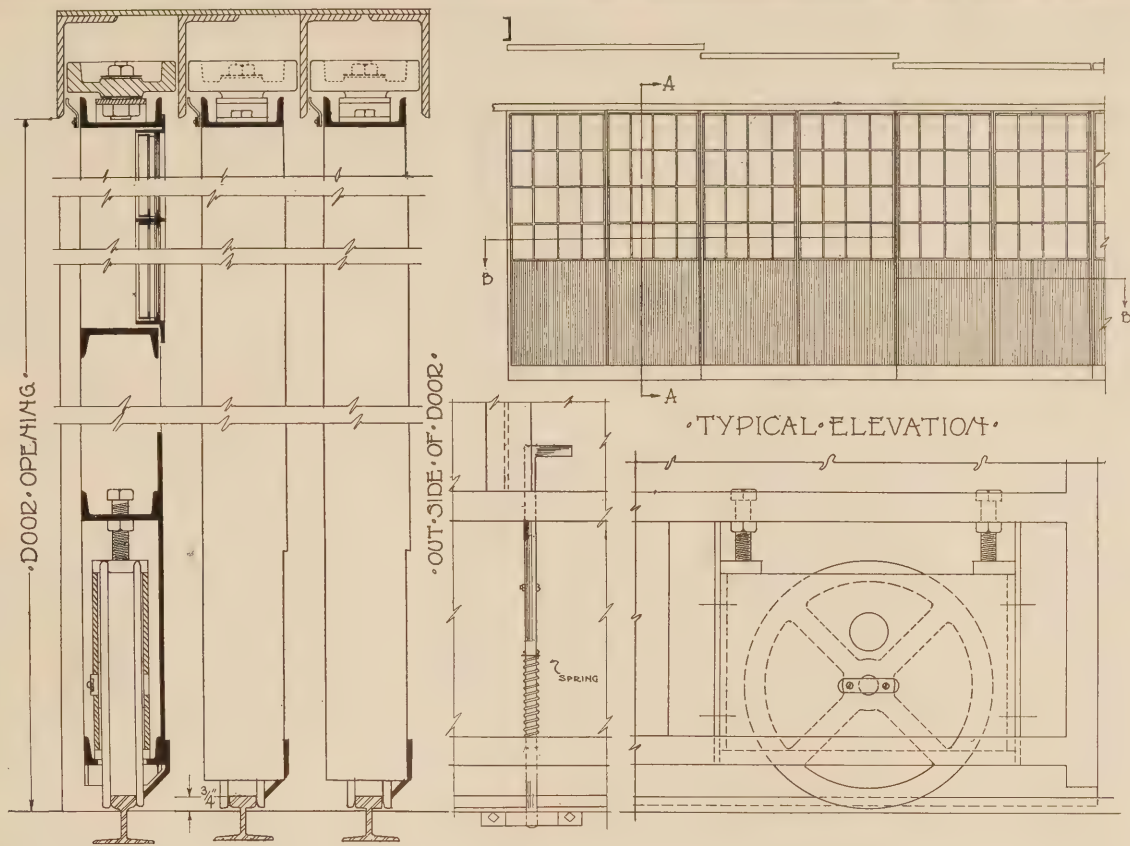
- 12 All doors shall receive one brushed shop coat of red oxide of iron paint, air dried before shipment. All metal to metal surface to be painted before assembly.

Erection

- 13 The erection of doors furnished in combination with steel window contracts shall be handled by manufacturer of same.
- 14 General contractor shall furnish and erect steel work as required for and to support the overhead guides to conform to track layout furnished by the Truscon Steel Company
- 15 General contractor shall furnish steel frame and steel contact strip to meet astragal on Truscon door.
- 16 General contractor shall furnish and set in concrete suitable size track, which must be laid perfectly straight and true to conform to track layout. Door bolt sockets furnished by Truscon are to be set by general contractor.

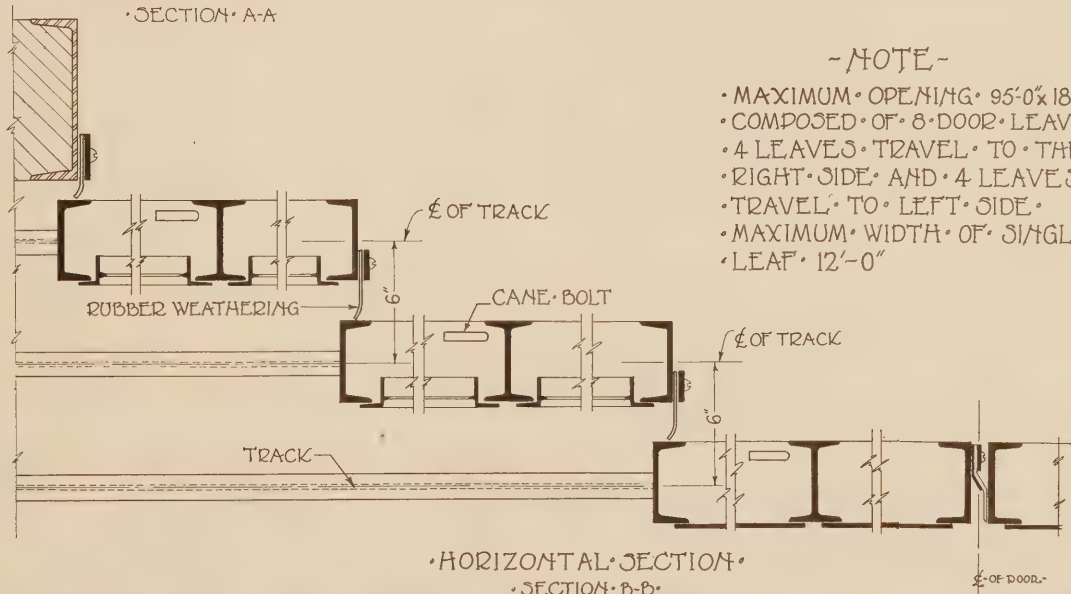
**These Specifications cover
Drafting Room Standard**

J-11 (page 99)



• VERTICAL SECTION •
• SECTION A-A

• DETAIL OF CANE BOLT AND WHEEL •



• HORIZONTAL SECTION •
• SECTION B-B

~ NOTE ~

- MAXIMUM OPENING 95'-0" X 18'-0"
- COMPOSED OF 8 DOOR LEAVES
- 4 LEAVES TRAVEL TO THE RIGHT SIDE AND 4 LEAVES TRAVEL TO LEFT SIDE
- MAXIMUM WIDTH OF SINGLE LEAF 12'-0"

TRUSCON
STEEL DOORS

• STRAIGHT SLIDE TYPE •
• TRUSCON AIRPLANE HANGAR DOOR •
• TRUSCON STEEL COMPANY • YOUNGSTOWN, OHIO •

J-11
APRIL 1929 •

TRUSCON AIRPLANE HANGAR STEEL DOORS

CURVED TRACK TYPE

SPECIFICATIONS

General

- 1 All doors shall be of the heavy tubular rail type as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All stiles and rails shall be constructed from hot drawn seamless steel tubing.
- 3 All sash included in doors shall be constructed from hot rolled special new billet steel. All steel panels to be not less than 12 gauge steel and shall be constructed of cold rolled sheets full pickled, reannealed and patent leveled.

Construction

- 4 The stiles, top rail, cross rails and bottom rail shall be constructed of No. 13 gauge seamless steel tubing, 4" x 2½".
- 5 The corners shall be mitered and internally reinforced, extending 12" in both directions from the corners. All mitre joints shall be welded and ground smooth.
- 6 The lower portion of the doors shall be fitted with a No. 12 gauge steel panel attached by means of drive screws. One hand hole per door unit shall be recessed in panel.
- 7 The upper portion of the doors shall be fitted with sash built up of Truscon standard members and glazed with glass lights as shown on the drawings. The glass shall be held in place with putty and glazing angles.
- 8 A standard Truscon Pilot door shall be provided in lower portion of one door unit.

Hardware

- 9 Sliding doors shall be mounted on malleable iron

wheels of Truscon size and design, same to be mounted in housing of malleable iron with roller swivel and ball bearings on vertical shaft.

- 10 Steel rollers are to be securely attached to head rail of doors which is to be sufficiently reinforced to reduce any local strain on door frame.
- 11 Rollers are to be bronze bushed and machined to minimize any friction developed during the rolling between the structural steel guides as furnished by general contractor. Rollers shall be of such design as to act purely as guides and in no way transmit any of the load of the door to the overhead structural guides.
- 12 Each door unit to have one Truscon Standard concealed door bolt, and shall be equipped with a flexible astragal held in place with metal strip, hexagon tap screwed for easy replacement.

Painting

- 13 All doors shall receive one brushed shop coat of red oxide of iron paint before shipment. All metal to metal surface to be painted before assembly.

Erection

- 14 The erection of doors furnished in combination with steel window contracts shall be handled by manufacturer of same.
- 15 General contractor shall furnish and erect steel work as required for and to support overhead tracks to conform to track layout beneath.
- 16 General contractor shall furnish steel frame and steel contact strip to meet astragal on Truscon door.
- 17 General contractor is to furnish and set in concrete suitable size track, which must be laid perfectly straight and true to conform to track layout. Door bolt sockets furnished by Truscon Steel Company shall be set by general contractor.

These Specifications cover the following

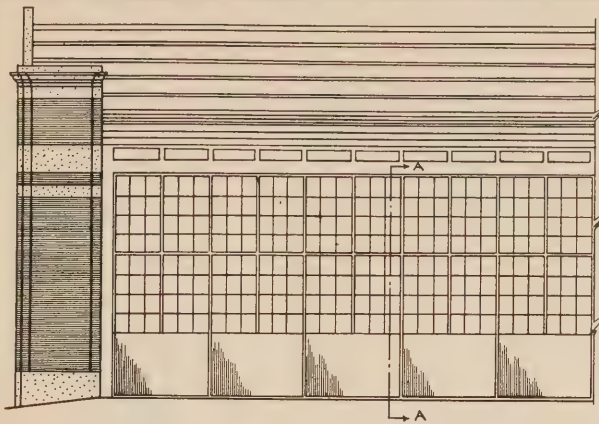
Drafting Room Standards:

J-7 (page 101)

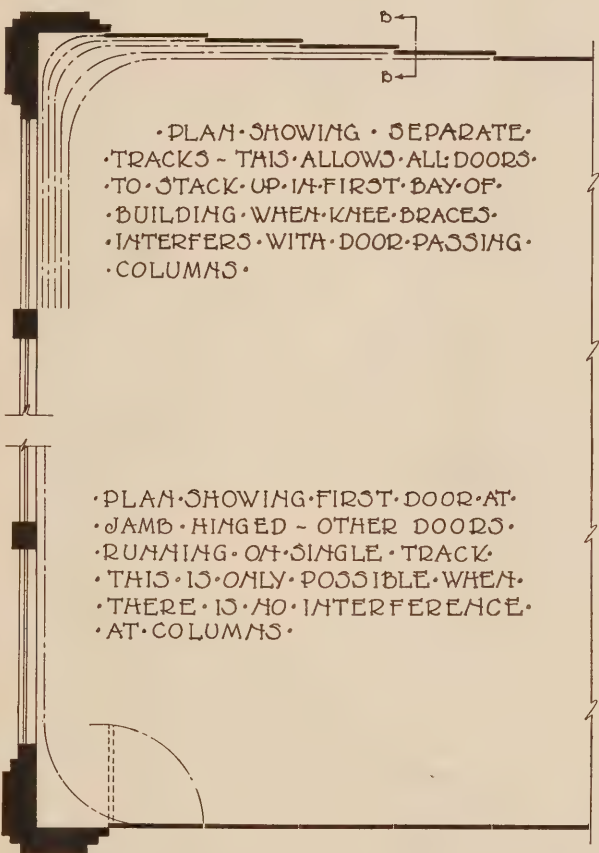
J-15 (page 103)

J-8 (page 102)

J-16 (page 104)



• ELEVATION •

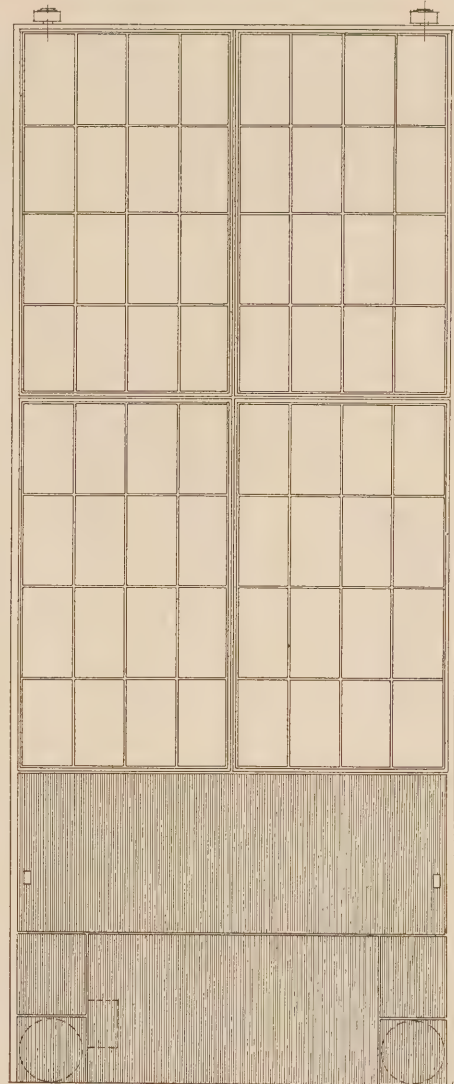


• PLAN SHOWING SEPARATE
• TRACKS - THIS ALLOWS ALL DOORS
• TO STACK UP IN FIRST BAY OF
• BUILDING WHEN KNEE BRACES
• INTERFERE WITH DOOR PASSING
• COLUMNS •

• PLAN SHOWING FIRST DOOR AT
• JAMB HINGED - OTHER DOORS
• RUNNING ON SINGLE TRACK
• THIS IS ONLY POSSIBLE WHEN
• THERE IS NO INTERFERENCE
• AT COLUMNS •

• PLAN •

• FOR SECTIONS SEE J-8 •



• ELEVATION OF DOOR •

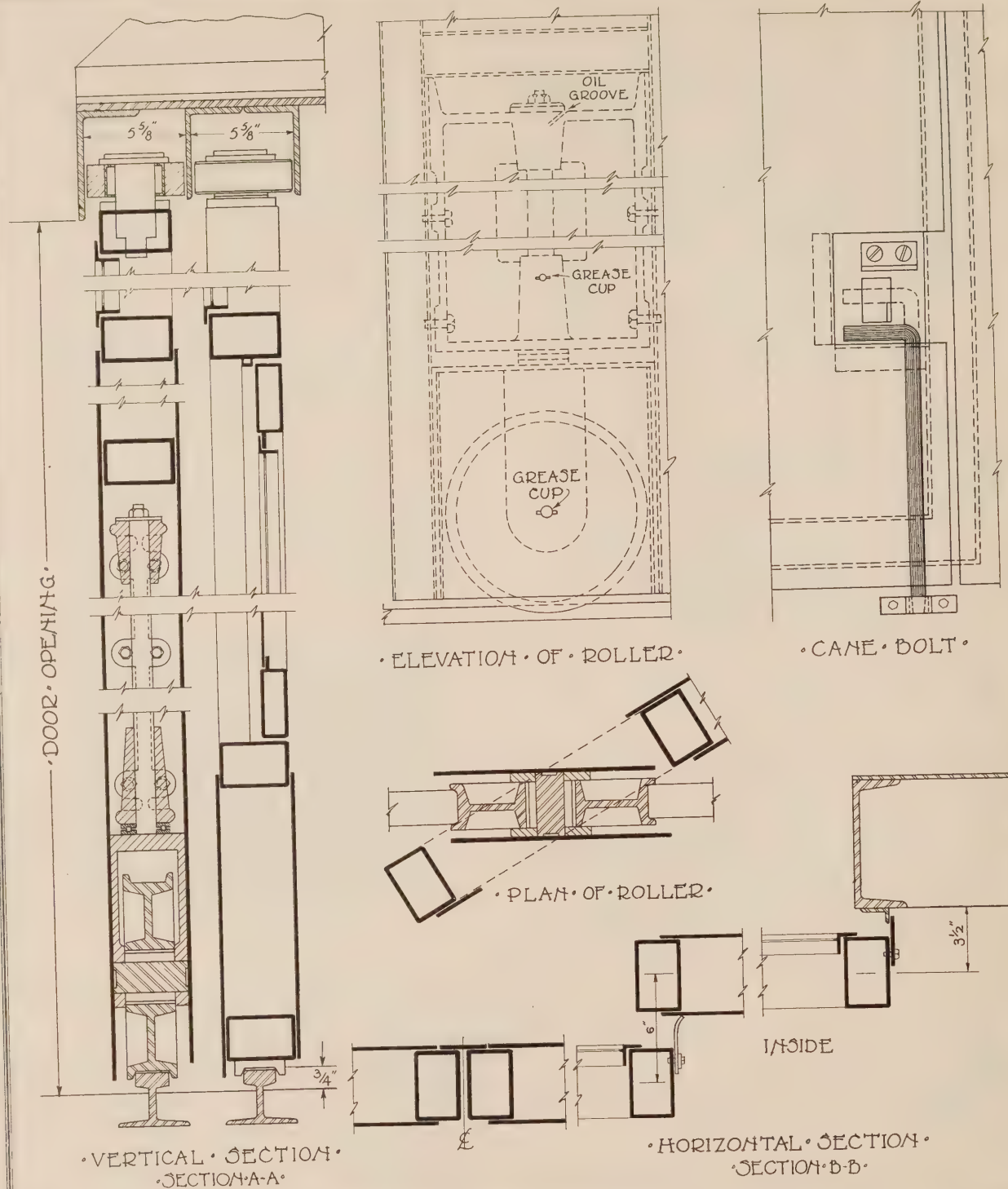
• NOTE •

• DOORS CAN BE FABRICATED UP TO 10'-0" x 20'-0"
• AND CAN BE MADE TO FIT ANY WIDTH
• OF OPENING -- PILOT DOOR CAN BE
• FURNISHED WHEN NECESSARY -- DOORS
• SLIDE ON RAIL TRACK EMBEDDED IN
• CONCRETE FLOOR AND SUPPORTING
• THE ENTIRE WEIGHT OF DOOR
• ROLLER BEARING WHEEL GUIDES ARE
• ATTACHED TO TOP OF DOOR AS
• A GUIDE •

TRUSCON
STEEL DOORS

• CURVED TRACK TYPE •
TRUSCON AIRPLANE HANGAR DOOR
• TRUSCON STEEL COMPANY •
• YOUNGSTOWN • OHIO •

J-7
JULY-1928

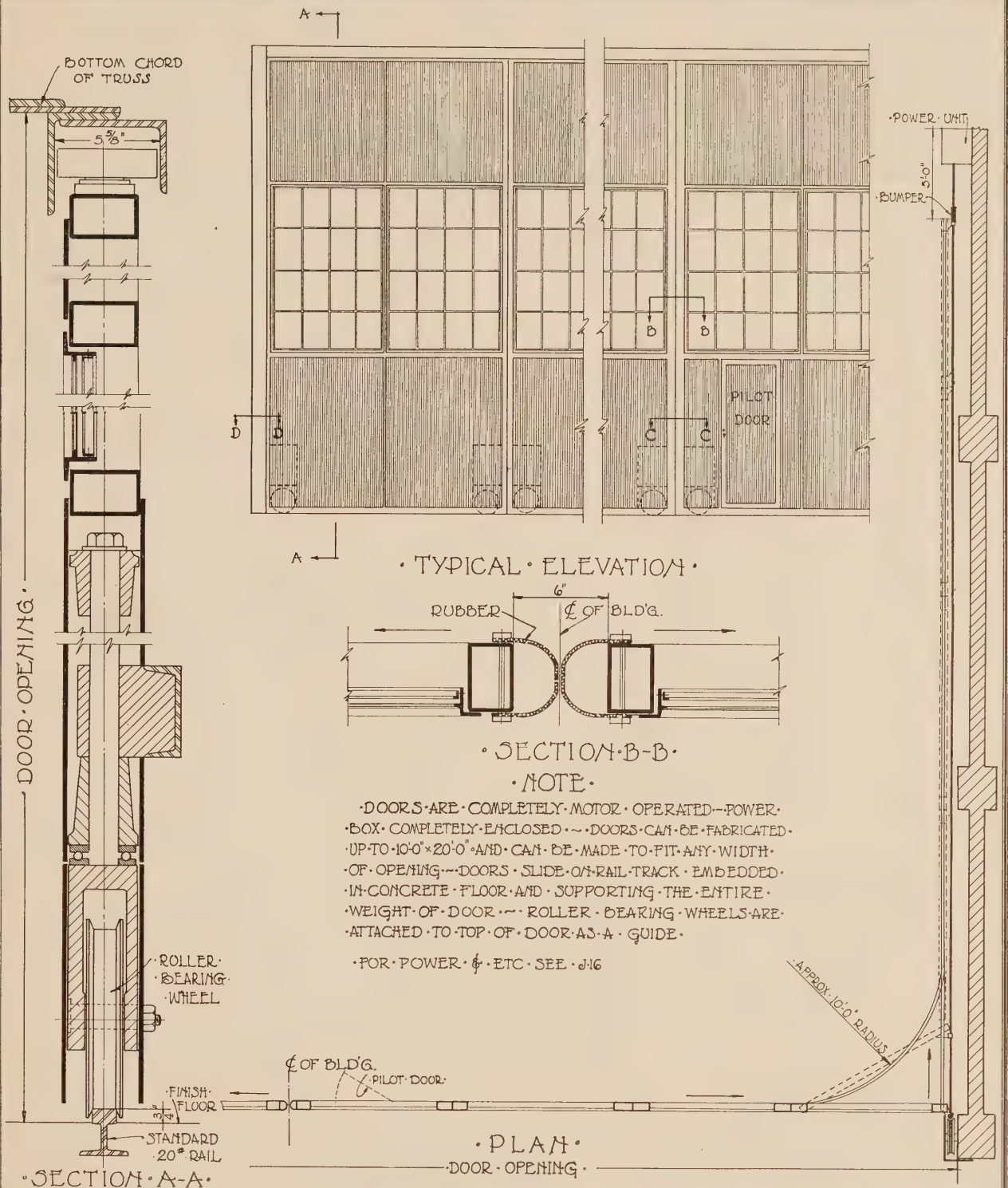


TRUSCON
STEEL DOORS

• CURVED TRACK TYPE •
TRUSCON AIRPLANE HANGAR DOOR
• TRUSCON STEEL COMPANY •
• YOUNGSTOWN • OHIO •

J-8
JULY-1928

Specifications on page 100



• TYPICAL • ELEVATION •

• SECTION B-B •

• NOTE •

• DOORS ARE COMPLETELY MOTOR OPERATED—POWER
 • BOX COMPLETELY ENCLOSED—DOORS CAN BE FABRICATED
 • UP TO 10'0" X 20'0" AND CAN BE MADE TO FIT ANY WIDTH
 • OF OPENING—DOORS SLIDE ON RAIL TRACK EMBEDDED
 • IN CONCRETE FLOOR AND SUPPORTING THE ENTIRE
 • WEIGHT OF DOOR—ROLLER BEARING WHEELS ARE
 • ATTACHED TO TOP OF DOOR AS A GUIDE

• FOR POWER & ETC SEE J16

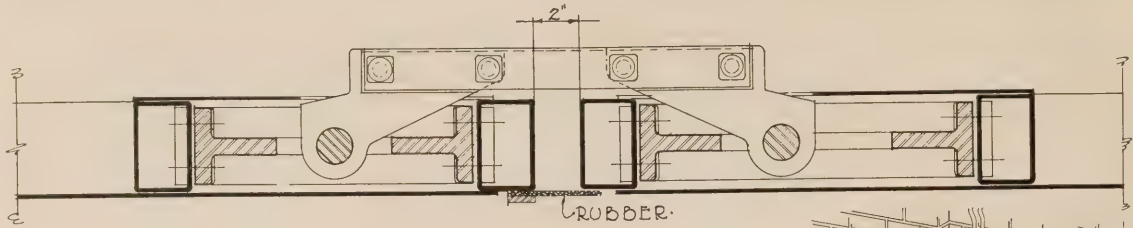
• PLAN •

• DOOR OPENING •

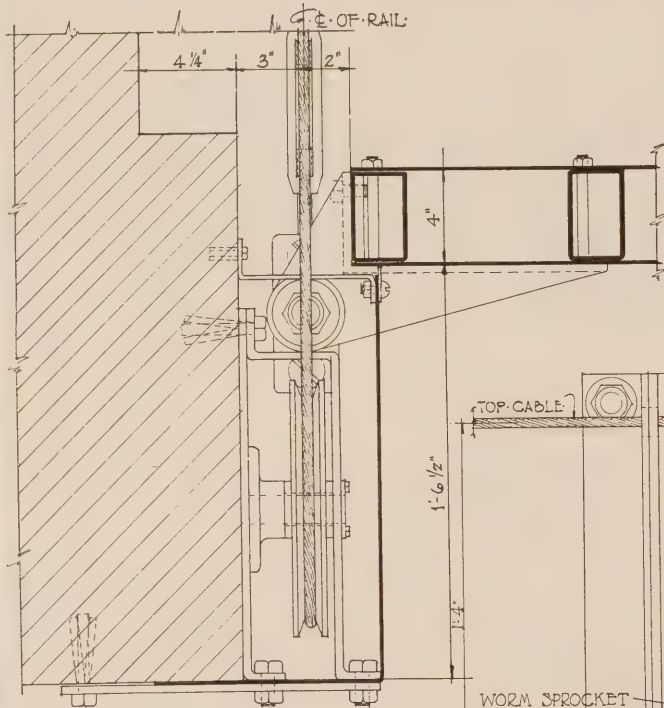
TRUSCON
STEEL DOORS

• CURVED TRACK - POWER OPERATED •
TRUSCON AIRPLANE HANGAR DOOR
 TRUSCON STEEL COMPANY • YOUNGSTOWN • OHIO •

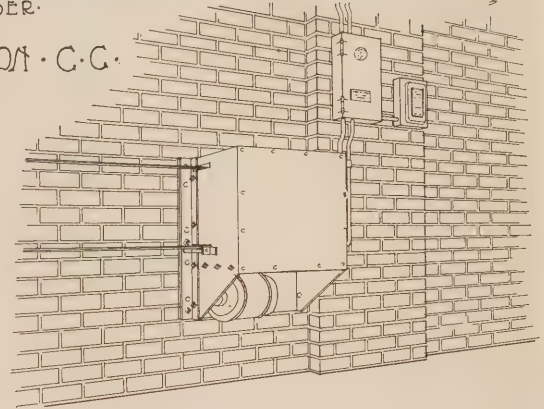
J-15
JULY 1928



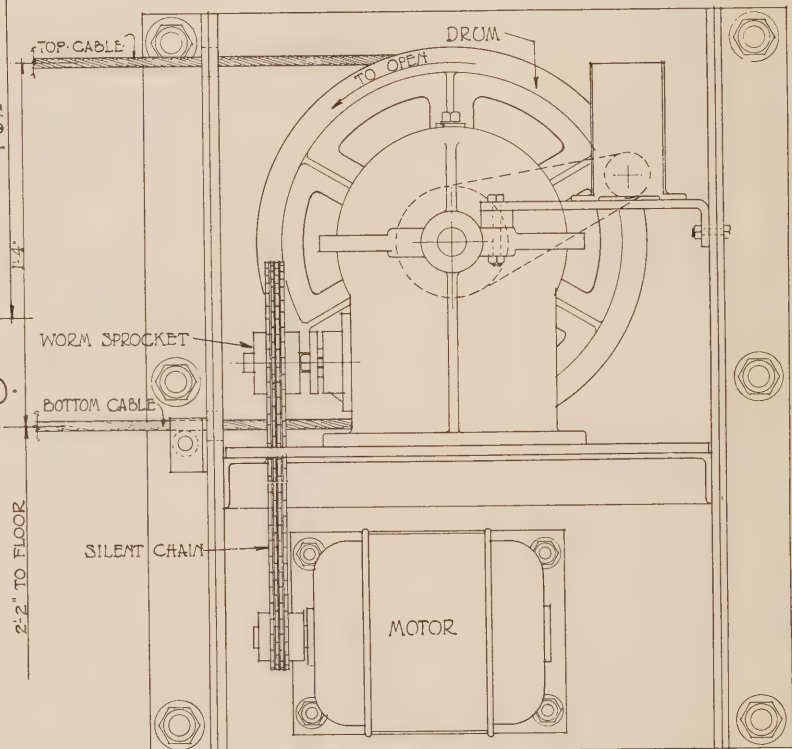
· HORIZONTAL · SECTION · C · C ·



· HORIZONTAL · SECTION · D · D ·



· PERSPECTIVE · OF · POWER ·



· FRONT · ELEVATION · OF · POWER · (COVER · REMOVED)

· PUSH · BUTTON · BOX ·
(LOCATED · WHERE · DESIRED)

· NOTE · FOR · PLAN · ELEVATION · § · ETC · SEE · J · 15 ·

TRUSCON
STEEL DOORS

· CURVED · TRACK · POWER · OPERATED ·
TRUSCON AIRPLANE HANGAR DOOR
TRUSCON STEEL COMPANY
YOUNGSTOWN · OHIO ·

J-16
JULY-1928

Specifications on page 100

TRUSCON DONOVAN AWNING-TYPE STEEL WINDOWS

SPECIFICATIONS

General

- 1 All windows so indicated on the plans and elevations and called for in these specifications shall be of the Donovan Awning-Type Window as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 Frames: All frames shall be cold-rolled, full pickled, re-annealed steel of No. 13 U. S. Standard Gauge
- 3 Sash: All sash members shall be constructed from hot-rolled, special billet steel.

Operation

- 4 Sash shall be operated by pushing out on the lower rail of the bottom sash and all superposed sash shall open and close simultaneously with the lower sash.
- 5 The construction of the component parts shall be such that not only shall all sash open and close simultaneously, but so arranged that the upper sash, or sashes, may be left open while the bottom sash is closed. The opening and closing of the sash shall be controlled by the lower sash acting as the manual of operation.
- 6 When the sash are closed, all parts, including the trunnion hinges, arms and rods, shall be concealed (back of the inside stop). No mechanism, such as rods, arms or hinges, shall be exposed to view with the sash in this position.

Construction

- 7 The outside members of the sash shall be assembled from a heavy-rolled channel section with mortise and tenon joints riveted and welded.
- 8 Muntin bars shall be mortised and riveted into outside sash members.
- 9 Horizontal meeting rails shall be designed to overlap and form a line-contact when closed.

- 10 Design shall provide for double contact at heads, sill and jambs when windows are closed.

- 11 Frames shall be constructed of pressed steel with all joints at corners welded and ground smooth.

Hardware

- 12 The bottom sash of all windows shall be equipped with malleable iron cam latch. (Bronze can be furnished if required).
- 13 All supporting arms for sash units shall be of flat steel sherardized with pivot points brass bushed.
- 14 Each window frame of two or three sash shall be equipped with two brass lever clutches, secured to the inside metal stops, by which the traveling rods may be disengaged from the trunnion hinge pins of the bottom sash, so that the upper two sash may be left open while the lower sash may be brought to a close, and conversely.
- 15 Shade bracket and cord holder will be furnished by the Sash Manufacturer and holes punched in sash for attaching.

Painting

- 16 All windows shall be given a protective shop coat of Truscon Non-Corrosive Paint before shipment. The remaining coats of paint will be furnished under separate contract by the painting contractor.

Glazing and Erection

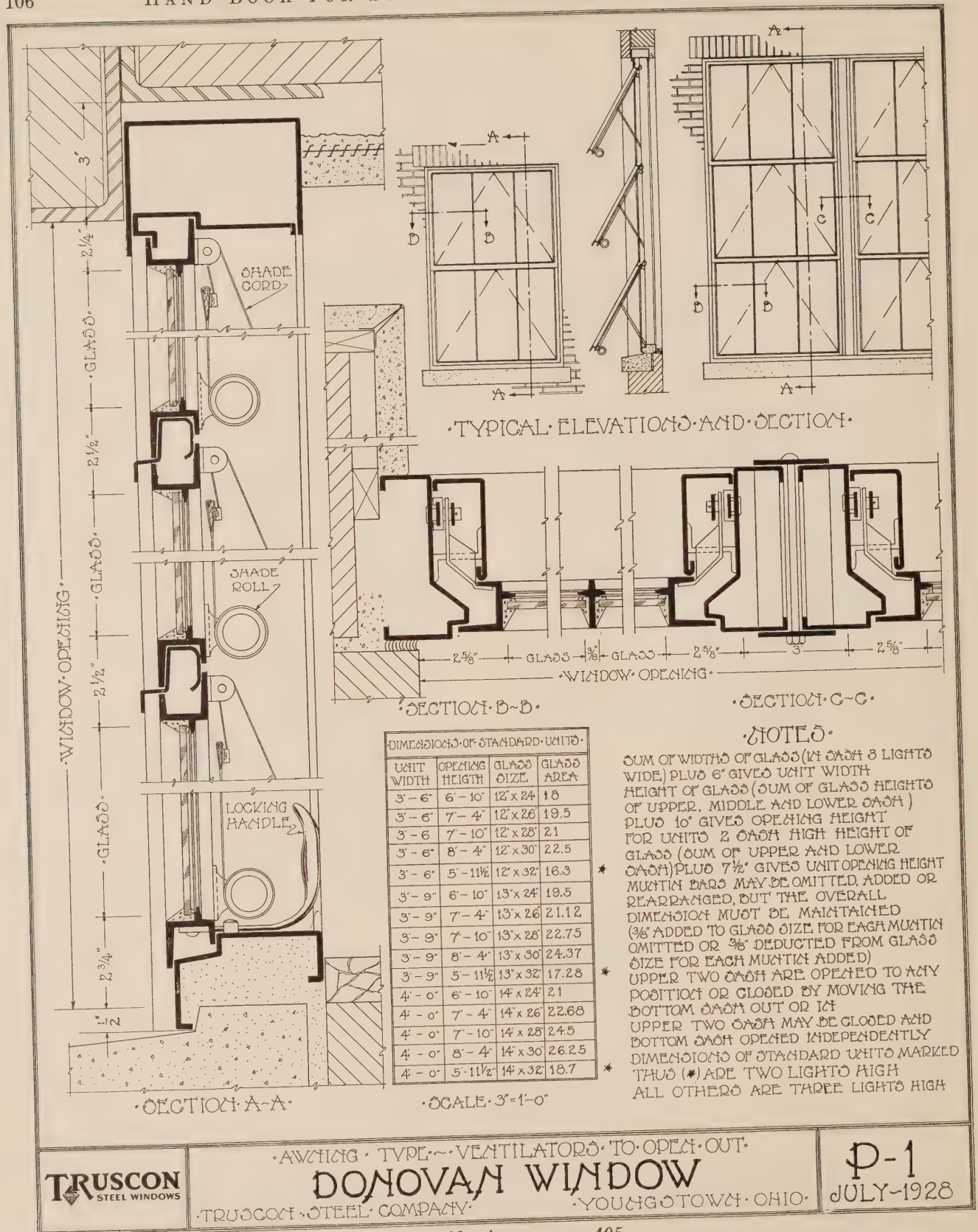
- 17 Glass shall be bed and face puttied with Truscon metal window putty and held in place with Truscon copper-clad glazing clips. All windows shall be OUTSIDE glazed.
- 18 All glass shall be furnished and glazing performed by the glazing contractor.
- 19 The erection and adjustment of windows shall be handled by the manufacturer of same.
- 20 After the windows have been set in masonry and properly built in, the joints between the frame and the masonry shall be carefully pointed up by the mason contractor.

These Specifications cover the following
Drafting Room Standards:

P-1 (page 106)

P-2 (page 107)

P-3 (page 108)



TRUSCON
STEEL WINDOWS

AWNING TYPE - VEILATOR TO OPEN OUT

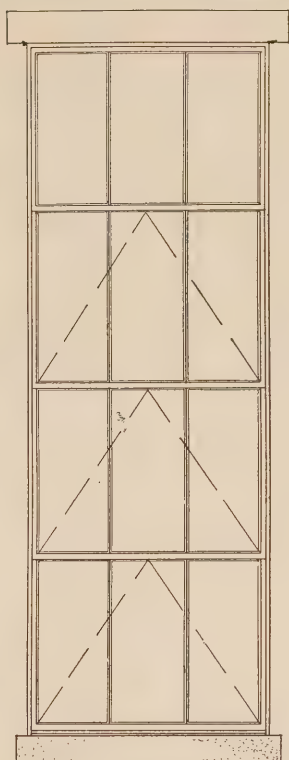
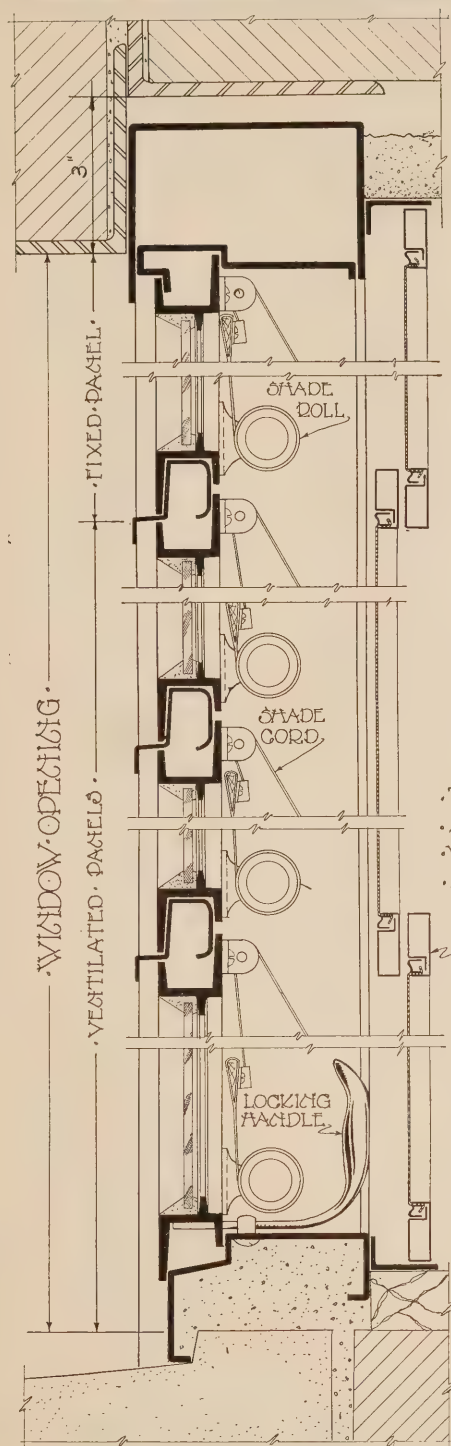
DONOVAN WINDOW

TRUSCON STEEL COMPANY

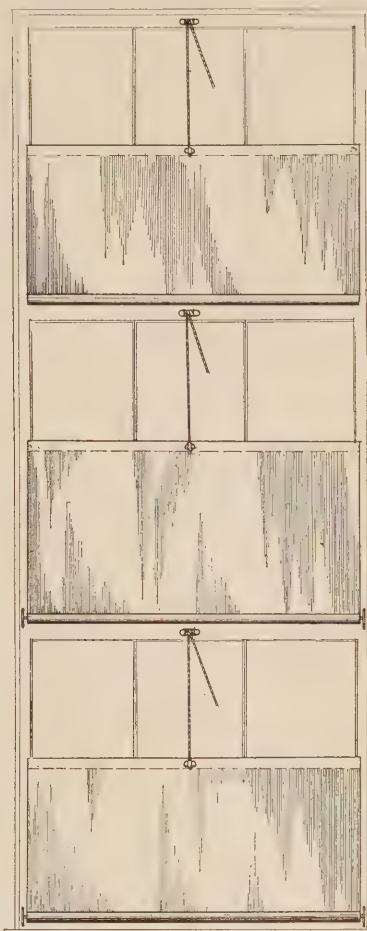
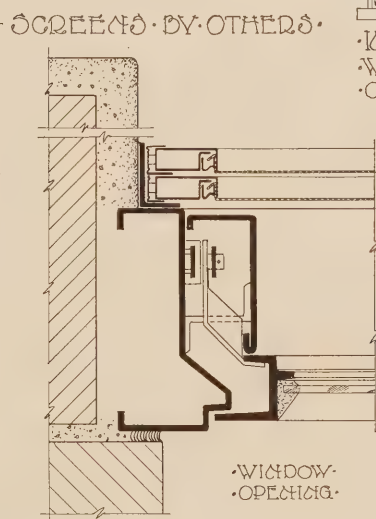
YOUNGOTOWN, OHIO

p-1

JULY-1928



• TYPICAL ELEVATION OF
• 4-LIGHT-HIGH DONOVAN
• WINDOW WITH FIXED
• PANEL AT TOP AS SHOWN



• INSIDE ELEVATION OF DONOVAN
• WINDOW SHOWING METHOD OF
• OPERATING WINDOW SHADES

• NOTE •

IF OPENING HEIGHT IS LARGER
THAN STANDARD 3-LIGHT
HIGH SASH 4-LIGHT-HIGH
SASH ARE USED KEEPING
TO STANDARD GLASS SIZE

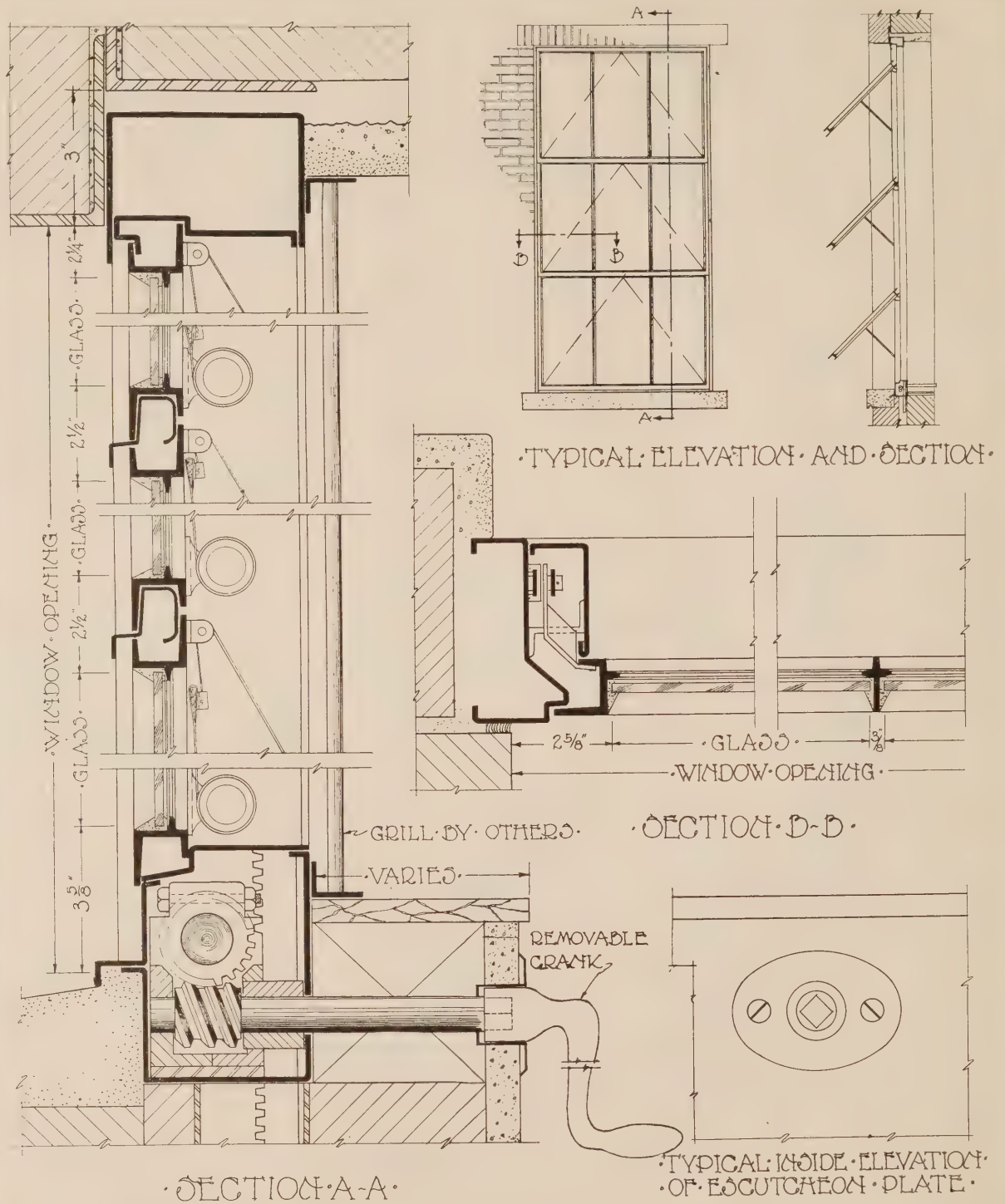
TRUSCON
STEEL WINDOWS

• SCREENS AND SHADES •
DONOVAN WINDOW

TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

P-2
JULY-1928



TRUSCON
STEEL WINDOWS

MECHANICAL OPERATOR FOR INSTITUTIONS
DOYONAN WINDOW
 TRUSCON STEEL COMPANY • YOUNGSTOWN, OHIO

P-3
DEC-1928

Specifications on page 105

TRUSCON DONOVAN AWNING TYPE STEEL WINDOWS

MODEL No. 29

SPECIFICATIONS

General

1. All windows so indicated on the plans and elevations and called for in these specifications shall be of the Model No. 29 Donovan Awning type window as manufactured by Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Material

2. All members shall be constructed from Truscon specification, hot-rolled new billet steel.

Operation

3. The lower sash is to be the manual of operation controlling the opening and closing of the upper sashes.
4. The construction of the component parts shall be such that not only shall all sashes open and close simultaneously but so arranged that the upper sash or sashes may be left open while the bottom sash is closed, or the bottom sash open with the upper sash closed. The sash shall be connected with a $\frac{3}{8}'' \times \frac{1}{8}''$ flat bar concealed in the frame and so fixed by the engaging pins of the clutch on the lower sash that with the clutch in its normal position with the pins engaged in the holes in the bar, the two or three sashes in the unit may be operated simultaneously, the traveling bar riding up and down in the channel frame section as the lower sash is operated. The engaging pins of the spring pivot in the lower sash to be so constructed that they may be disengaged allowing the lower sash to be operated singly and also that when the lower sash is used as the manual of operation to open the upper sash, the lower sash may be closed by disengaging the clutch pins.

Construction

5. All joints shall be mortise and tenon, and air-hammer riveted.
6. The four corners of all sash and frames to be welded and ground smooth where necessary.
7. Muntins shall be mortised and tenoned at sash members and air-hammer riveted.
8. Ventilators shall have double contact weathering on all four sides.

9. The outside section of the window shall be a heavy, solid rolled steel channel.

10. There shall be two heavy supporting arms attached to the sash and frame, designed to be concealed when the ventilator is closed. The rivet holes in supporting arms shall have brass bushings.

Hardware

11. The bottom sash of all windows shall be equipped with water-rolled bronze locking handle fitted to the lower rail and a clutch handle at the center of the upper rail of the lower sash. (Polished bronze or malleable iron can be furnished if required).
12. All supporting arms for sash units shall be of flat steel, sherardized with pivot points brass bushed.
13. The upper sashes shall be equipped with trunnion hinges so placed as to obtain perfect balance and leverage of the sashes with one (1) leaf of the hinge riveted to the sash and the other pivoted to a shoe on the traveling bar. The lower sash shall be equipped with a spring pivot.
14. Each sash in the window shall be equipped with shade brackets and cord rollers. The shade brackets will be attached to the lower rail of each sash and the cord rollers at the center of the upper rail of sashes. Shade brackets and cord rollers are so placed to allow shades to be drawn up from the bottom to secure the awning effect.

Painting

15. All window units shall be given a shop dip coat of protective paint before shipment. (For Paint Specifications, see Plate S-1, Drafting Room Standards).

Glazing and Erection

16. Glass shall be bed and face puttied with Truscon metal window putty and held in place with Truscon copper-clad glazing clips. All windows shall be OUTSIDE glazed.
17. All glass shall be furnished and glazing performed by the glazing contractor.
18. The erection and adjustment of windows shall be handled by the manufacturer.
19. After the windows have been set in masonry and properly built in, the joints between the frame and the masonry shall be carefully pointed by the mason contractor.

These Specifications cover the following
Drafting Room Standards:

P-4 (page 110)

P-5 (page 111)

P-6 (page 112)

WINDOW OPENING

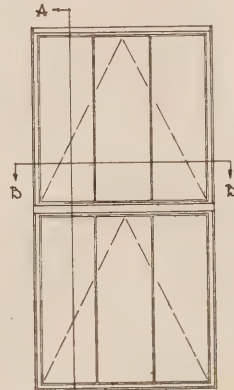
WIDTH	2'-6"	3'-3"	3'-6"	3'-9"	4'-0"
5'-0"					
	26-50	33-50	36-50	39-50	40-50
5'-6"					
	26-56	33-56	36-56	39-56	40-56
6'-0"					
	26-60	33-60	36-60	39-60	40-60
6'-6"					
	26-66	33-66	36-66	39-66	40-66
7'-5 1/2"					
	26-76	33-76	36-76	39-76	40-76
8'-2 1/2"					
	26-83	33-83	36-83	39-83	40-83
8'-11 1/2"					
	26-90	33-90	36-90	39-90	40-90

WINDOW OPENING
HEIGHT

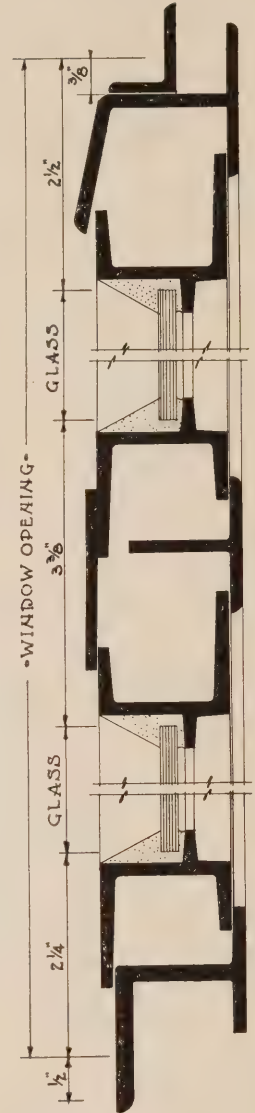
-NOTES-

SUM OF WIDTHS OF GLASS (IN SASH & LIGHTS WIDE) PLUS 4 3/4" GIVES UNIT WIDTH. HEIGHT OF GLASS (SUM OF GLASS HEIGHTS OF UPPER, MIDDLE & LOWER SASH) PLUS 11 1/2" GIVES OPENING HEIGHT.

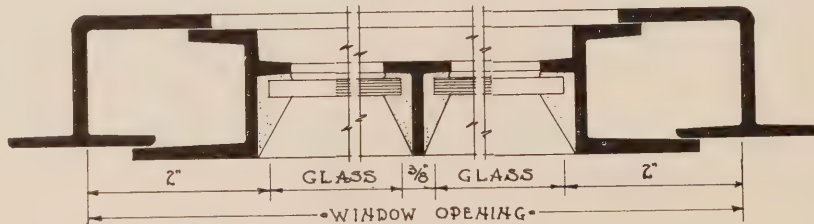
FOR UNITS 2 SASH HIGH, HEIGHT OF GLASS (SUM OF UPPER & LOWER SASH) PLUS 6" GIVES UNIT OPENING HEIGHT. MUNTIN BARS MAY BE OMITTED, ADDED OR REARRANGED, BUT THE OVERALL DIMENSION MUST BE MAINTAINED (ADD 3/8" TO GLASS SIZE FOR EACH MUNTIN OMITTED OR 3/8" DEDUCTED FROM GLASS SIZE FOR EACH MUNTIN ADDED) UPPER TWO SASH ARE OPENED TO ANY POSITION OR CLOSED BY MOVING THE BOTTOM SASH OUT OR IN. UPPER TWO SASH MAY BE CLOSED & BOTTOM SASH OPENED INDEPENDENTLY.



-TYPICAL ELEVATION-



-SECTION-A-A-



-SECTION-B-B-

-SCALE - HALF FULL SIZE-

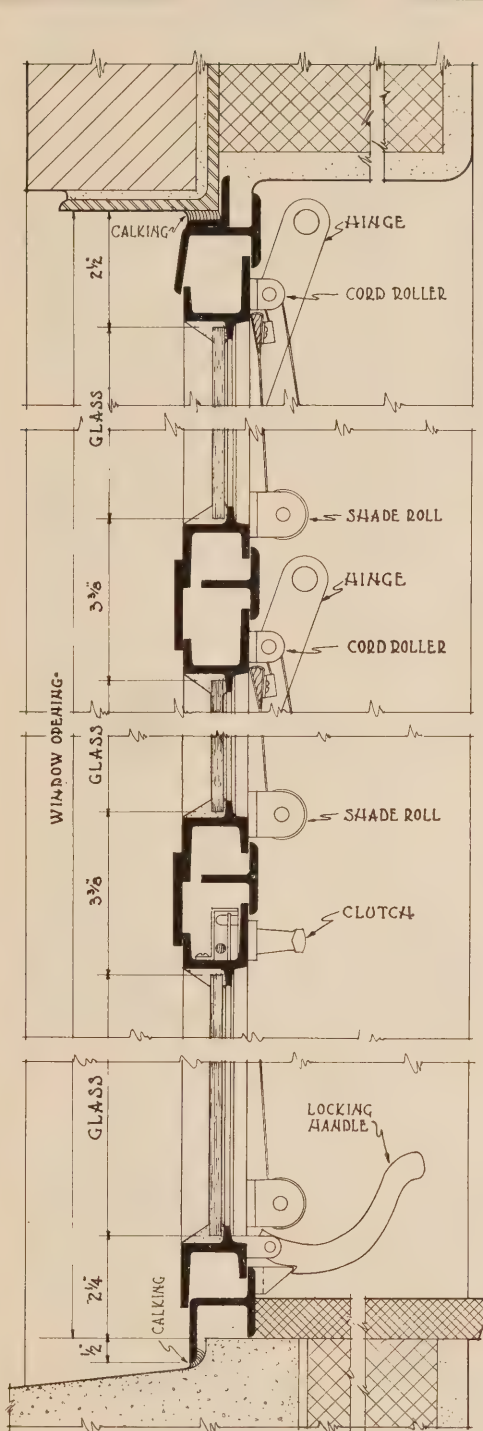
TRUSCON
STEEL WINDOWS

-STANDARDS-

-DOHOVAN WINDOW-

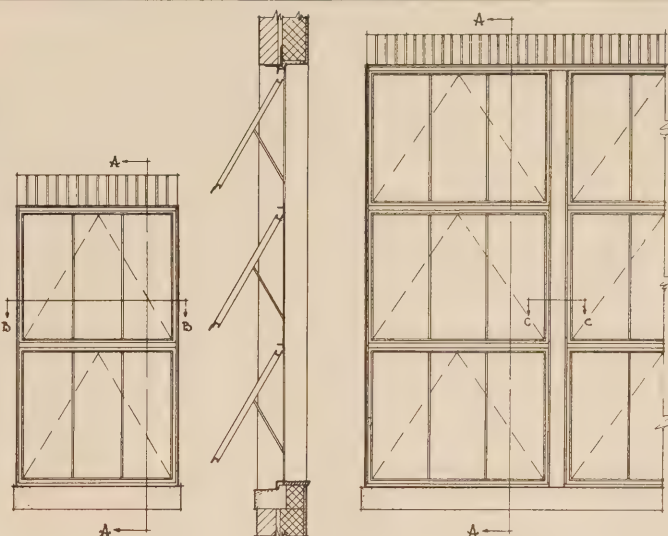
TRUSCON STEEL COMPANY MODEL NO 29 YOUNGSTOWN-OHIO

D-4
MARCH-1929

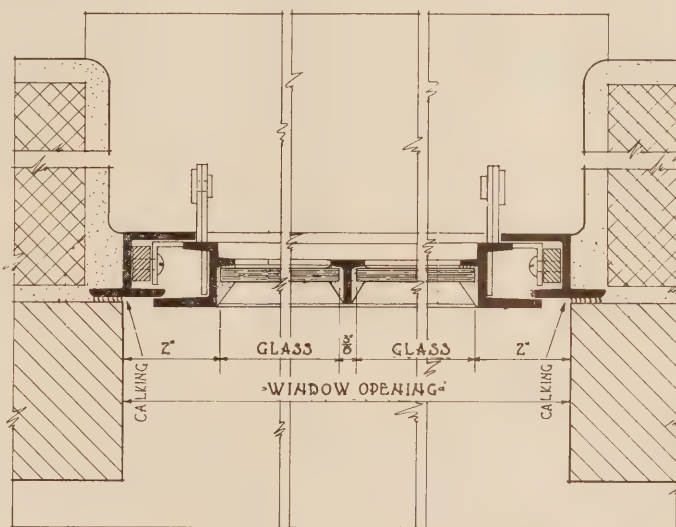


-SECTION-A-A-

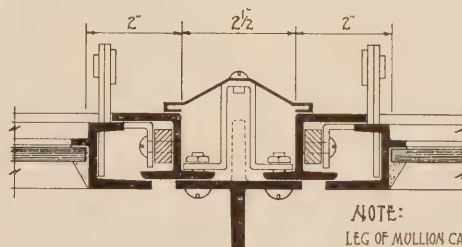
SCALE-3"-1'-0"



-TYPICAL ELEVATIONS & SECTION-



-SECTION-B-B-



-SECTION-C-C-

NOTE:
LEG OF MULLION CAN BE TURNED IN OR
OUT ON 2-SASH HIGH UNITS. MUST BE
OUT TURNED ON ALL 3-SASH HIGH UNITS.

TRUSCON
STEEL WINDOWS

-AWNING - TYPE - VENTILATORS - TO OPEN OUT-

-DOUGLAS WINDOW-

-TRUSCON-STEEL-COMPANY-

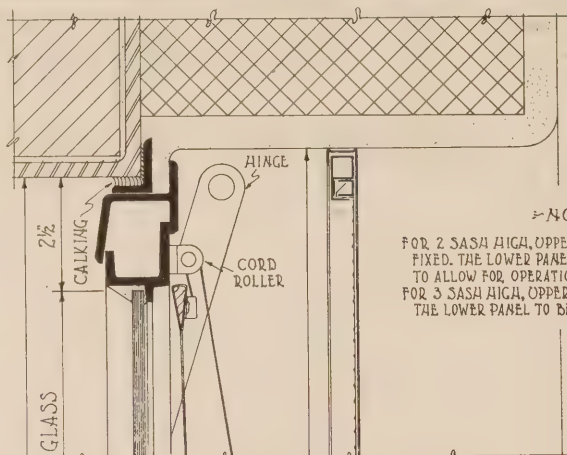
-MODEL-NO-29-

-YOUNGSTOWN-OHIO-

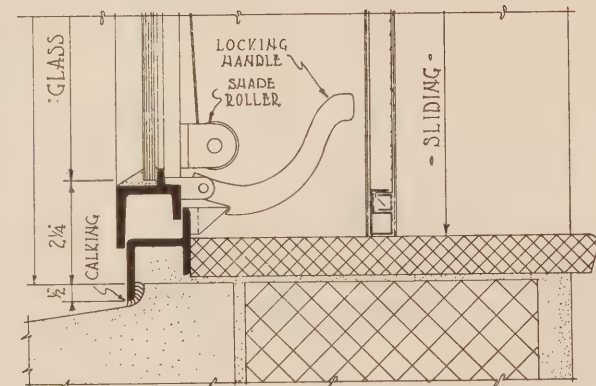
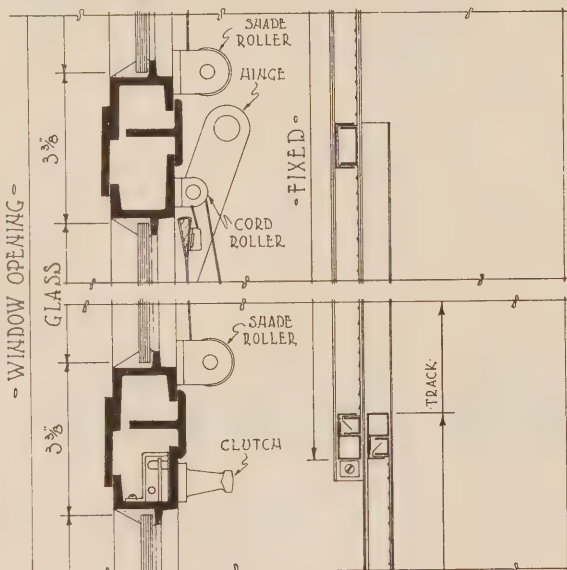
D-5

FEB-1929

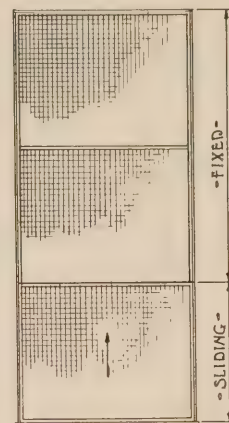
Specifications on page 109



~NOTE~
FOR 2 SASH HIGH, UPPER PANEL OF SCREEN TO BE FIXED. THE LOWER PANEL TO BE VERTICAL SLIDING TO ALLOW FOR OPERATION OF LOCKING HANDLE.
FOR 3 SASH HIGH, UPPER TWO PANELS TO BE FIXED. THE LOWER PANEL TO BE VERTICAL SLIDING.



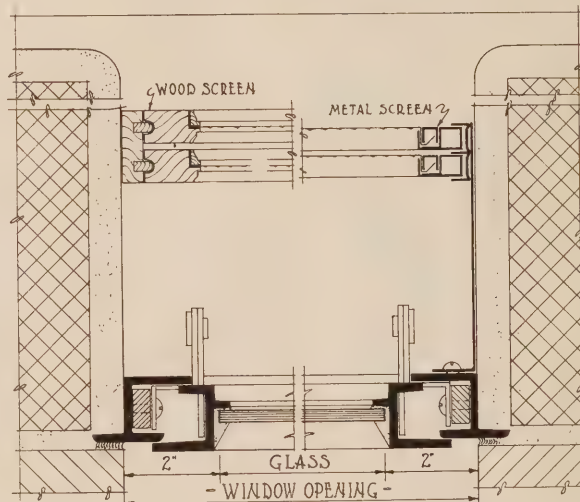
- VERTICAL SECTION OF WINDOW & SCREEN -



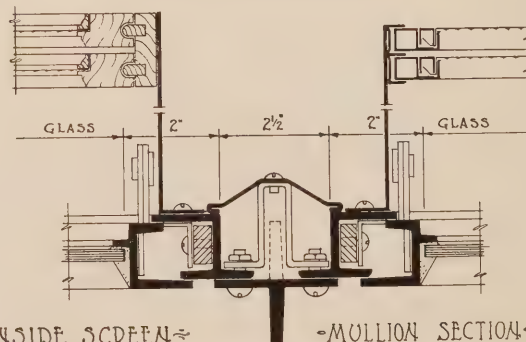
- ELEVATION OF SCREEN -



- SECTION -



- HORIZONTAL SECTION OF WINDOW & SCREEN -



~ INSIDE SCREEN ~

- MULLION SECTION -

TRUSCON
STEEL WINDOWS

~ AWNING ~ TYPE ~ VENTILATORS ~ TO ~ OPEN ~ OUT ~
~ DONOVAN ~ WINDOW ~
~ TRUSCON ~ STEEL ~ COMPANY ~ ~ MODEL ~ NO ~ 29 ~ ~ YOUNGSTOWN ~ OHIO ~

D-6

MARCH 1929

Specifications on page 109

TRUSCON DOUBLE-HUNG STEEL WINDOWS

COUNTERWEIGHTED

MODEL No. 28

SPECIFICATIONS

General

- 1 All window openings shown on drawings, unless otherwise specified, shall be equipped with solid steel, plate type (galvanized and weather-stripped) Model "28" Double-Hung Windows, as manufactured by Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the written consent and approval of the architect.

Scope of Work

- 2 The steel window manufacturer shall include in his work the furnishing of all steel Double-Hung Windows complete, and shall furnish and apply hardware and weights and make a final adjustment of windows shown on drawings and covered in specifications.

Work Not Included

- 3 In window manufacturer's contract, but to be performed by others under general contract: Erection, glass, glazing, putty, caulking, grouting, pointing, and field painting before and after erection.

Material

- 4 All windows throughout to be constructed of Truscon special hot rolled new billet steel, galvanized. Sills to be of 12-gauge; weight boxes, jambs, pulley stile and heads, 16-gauge; head covers, 18-gauge; rails and stiles of sash, 12-gauge; inside glazing strips at jambs, 14-gauge, and at top and bottom rail, 12-gauge.

Construction

- 5 Frame Members: Head, sill and jambs constructed each of one piece of metal exclusive of the parting stop, weight box cover and head cover; all members formed straight and true, with welded joints ground smooth; staff bead formed on exterior of frame of double thickness of metal.

Pulley stiles formed with deep weathering and the pulley stile and weight box cover held in place with one line of oval head screws passing through a heavy reinforcing piece on inside of jamb. Adjustment of sash and frame is secured by these screws which hold the pulley stile and weight box cover. The weight box cover runs the full height of the jamb from sill to head, and is removable.

A brass check plate is to be attached at the meeting rail to insure weathering.

A wind stop is to be provided to prevent air entering room from slot under upper sash.

Sash Members: Sash members shall be so designed that the distance from masonry opening to glass line at jambs and head will be $2\frac{1}{2}$ ".

Corners of sash shall be welded and ground smooth.

Where muntins are required they shall fit into the sash members and be welded in such a manner that a flush surface is secured at joints and intersections.

The meeting rails to be formed so as to interlock.

Glazing strips secured with oval head screws, permitting inside glazing.

Weatherstripping: Weatherstripping shall be provided of spring bronze and applied to sash members at sill, jambs, meeting rail and head.

Hardware Equipment: Frames are equipped with pressed steel pulleys and pressed steel housings with hard steel pins in a brass bushing. Sash are hung on No. 130 galvanized steel sash chains running concealed behind pulley stiles and properly balanced with cast iron weights. Sash are equipped with one pair of lift handles, one combination adjustable sweep lock and pull-down handle for upper sash, and one pole socket—all of galvanized malleable iron.

Notes:—Special steel or lead weights are supplied where cast iron weights are not sufficient to properly balance sash.

Hardware is furnished in bronze where so specified at an additional price.

Painting

- 6 All windows shall be given a dip coat of Truscon special protective paint after assembly (in addition to galvanizing) and before shipment, covering all surfaces, inside and outside, weight boxes and other concealed spaces.

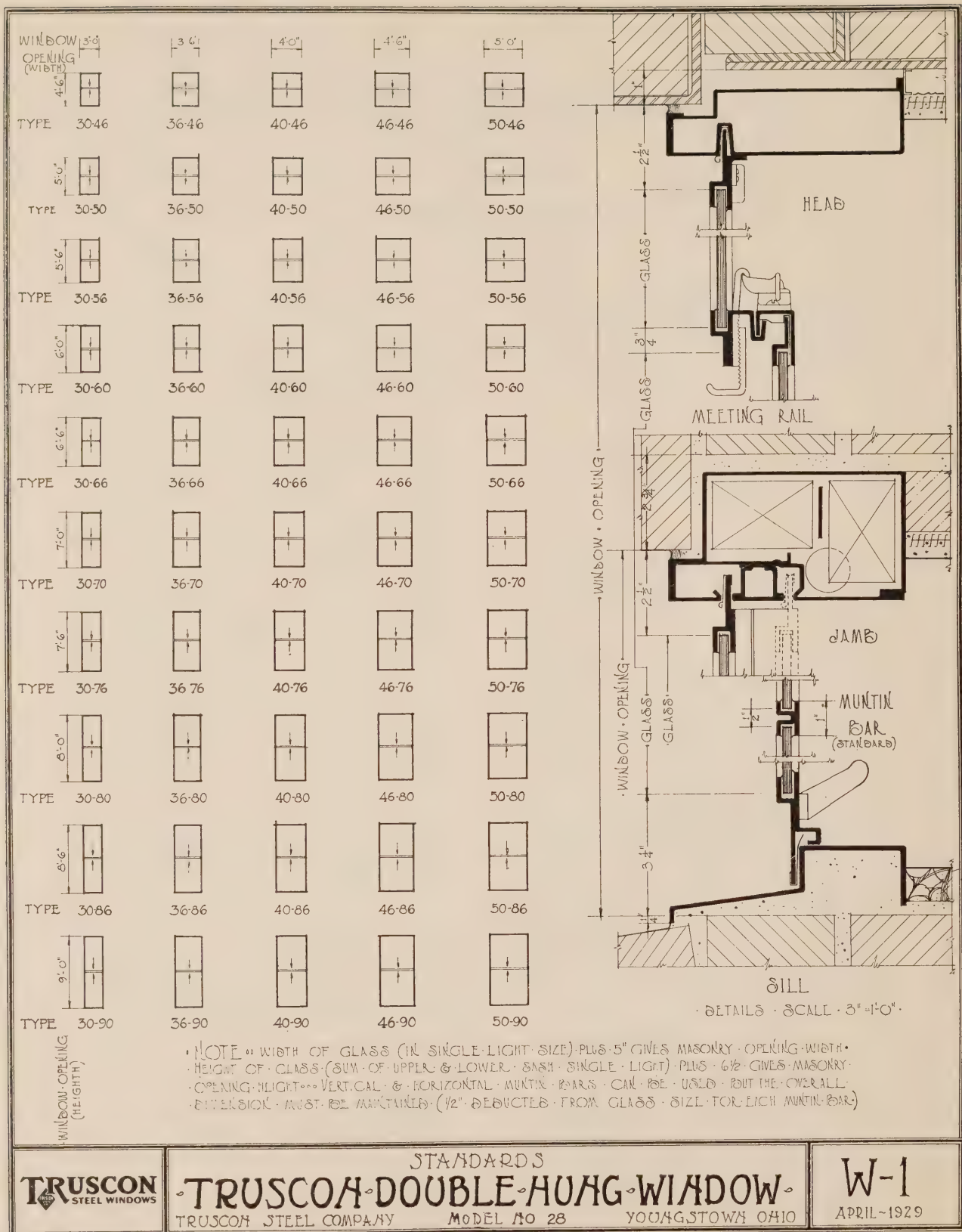
Notes:—Glass shall be embedded in special, natural grey, steel window putty, made for this purpose by the Truscon Laboratories.

The use of $\frac{3}{8}$ " plate glass is recommended for steel Double-Hung Windows where plate glass is desired.

Polished or rib-wire glass may be used—also sheet glass within reasonable size limits.

These Specifications cover the following Drafting Room Standards:

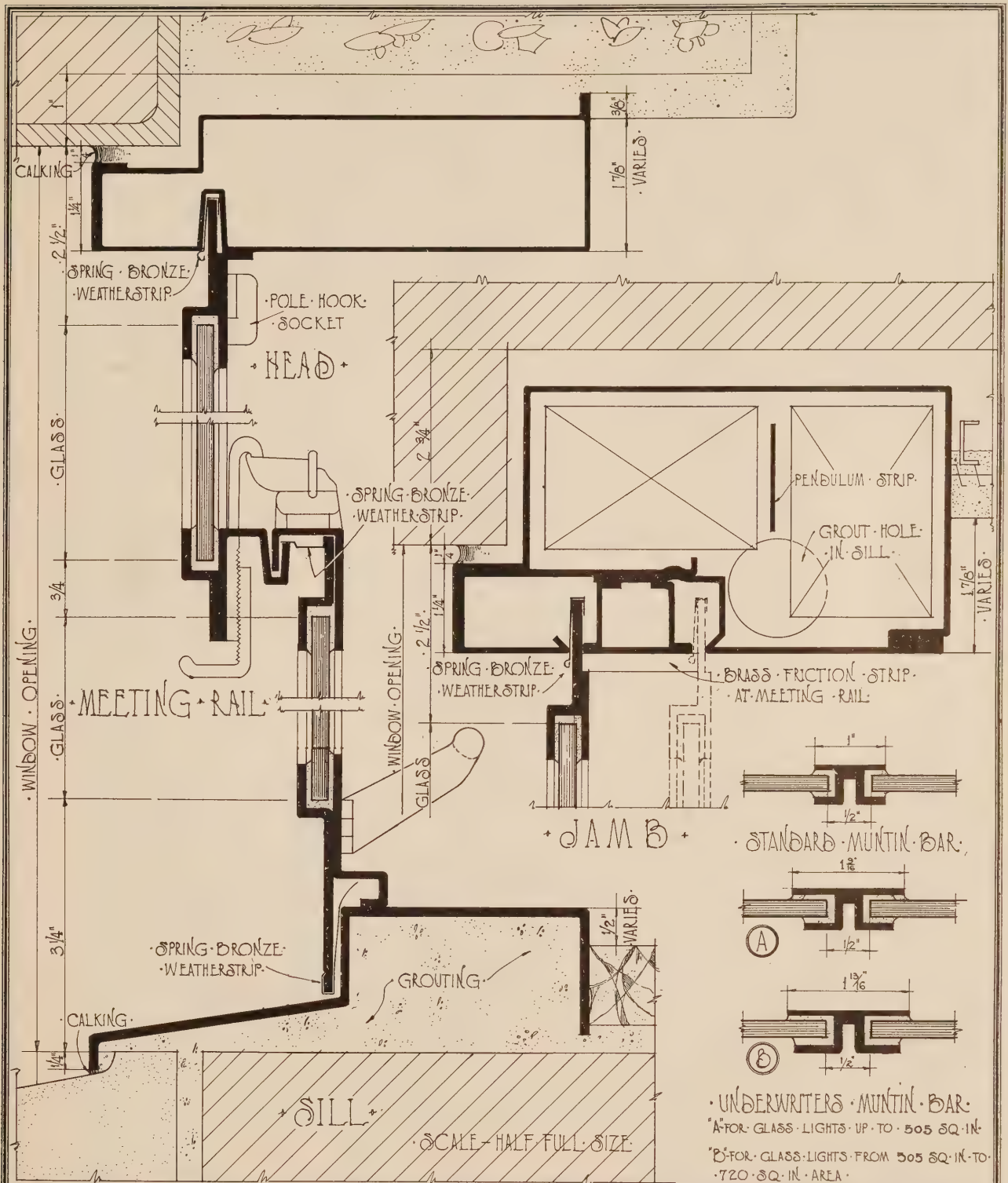
W-1 (page 114)	W-5 (page 118)
W-2 (page 115)	W-6 (page 119)
W-3 (page 116)	W-7 (page 120)
W-4 (page 117)	W-8 (page 121)
W-9 (page 122)	



TRUSCON
STEEL WINDOWS

STANDARDS
TRUSCON DOUBLE HUNG WINDOW
TRUSCON STEEL COMPANY MODEL NO 28 YOUNGSTOWN OHIO

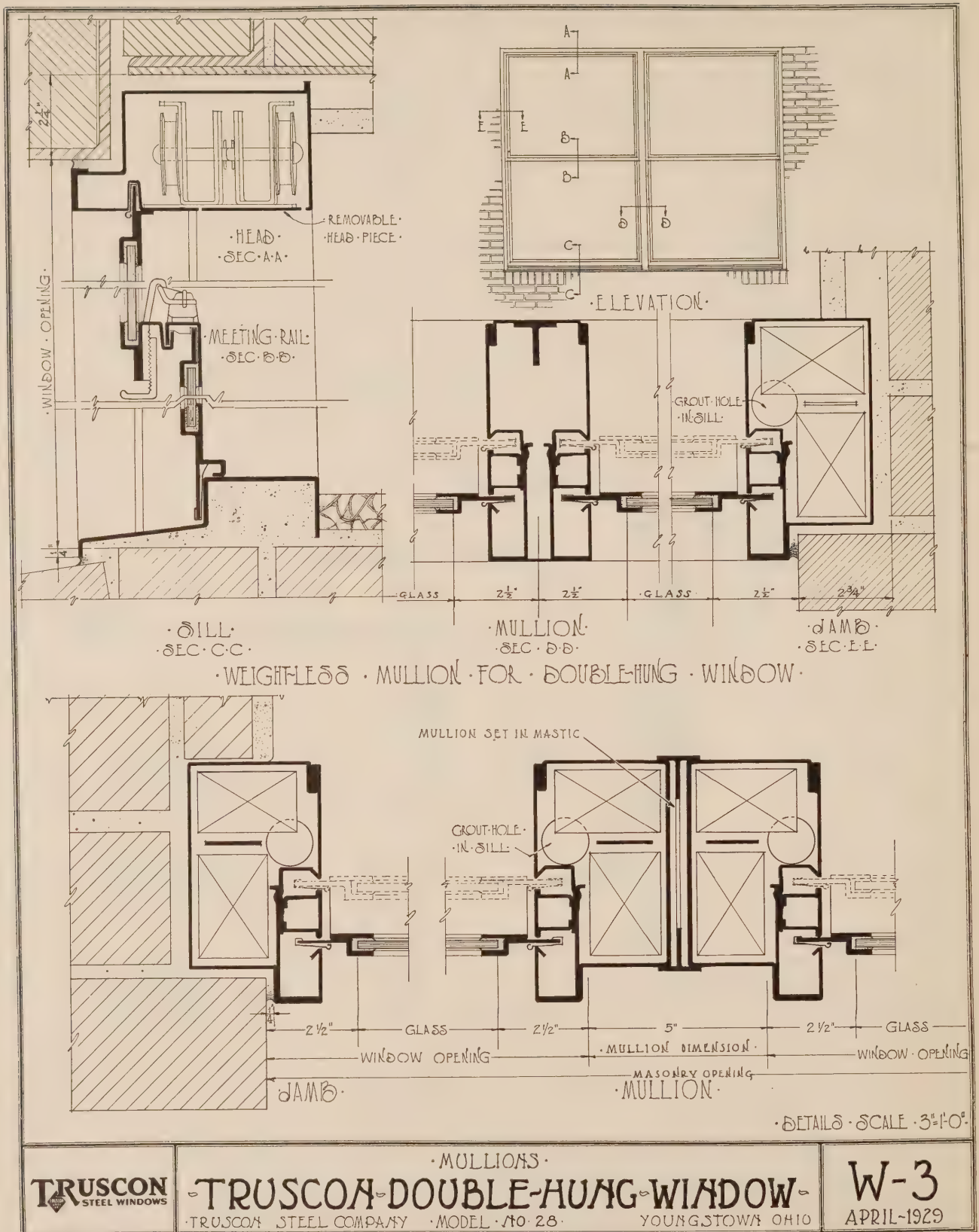
W-1
APRIL-1929



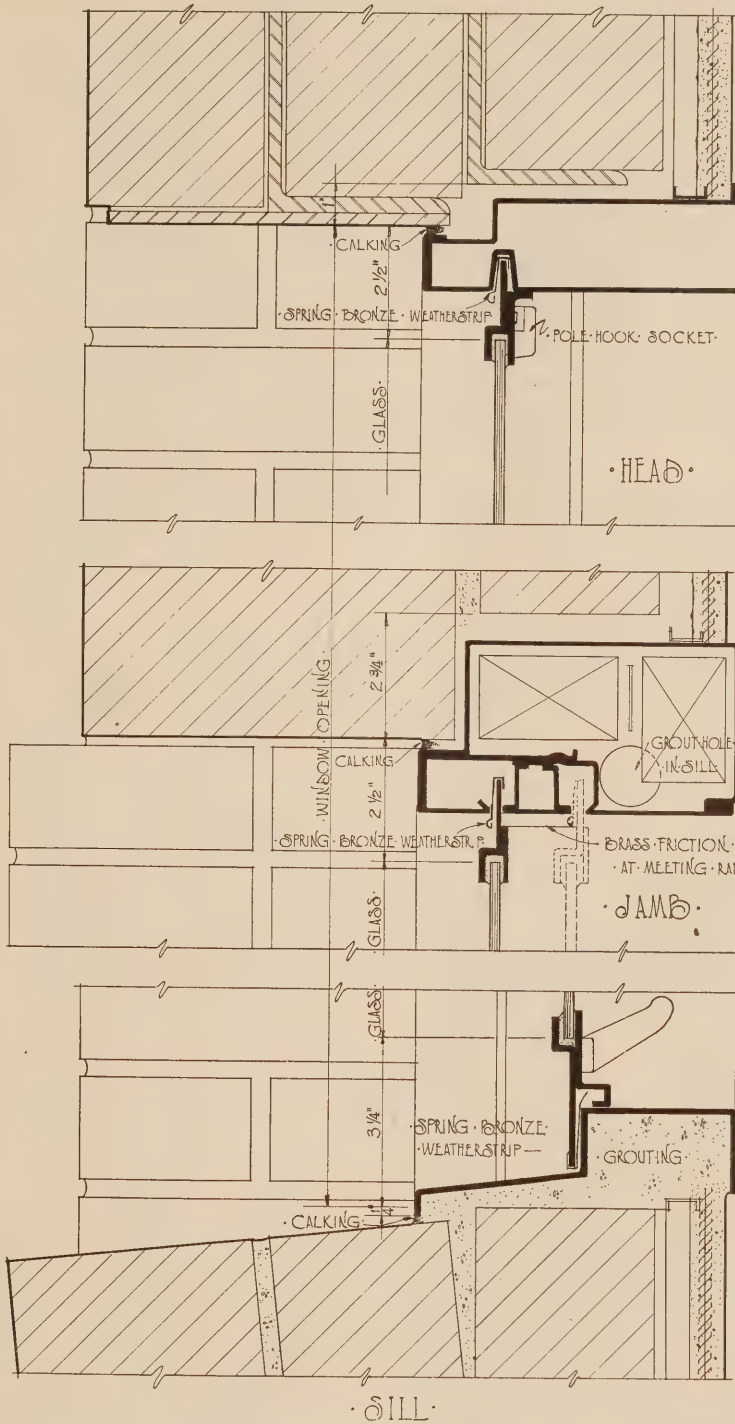
TRUSCON
STEEL WINDOWS

STANDARD
TRUSCON DOUBLE-HUNG WINDOW
TRUSCON STEEL COMPANY · MODEL · NO. 28 · YOUNGSTOWN, OHIO

W-2
APRIL-1929



Specifications on page 113



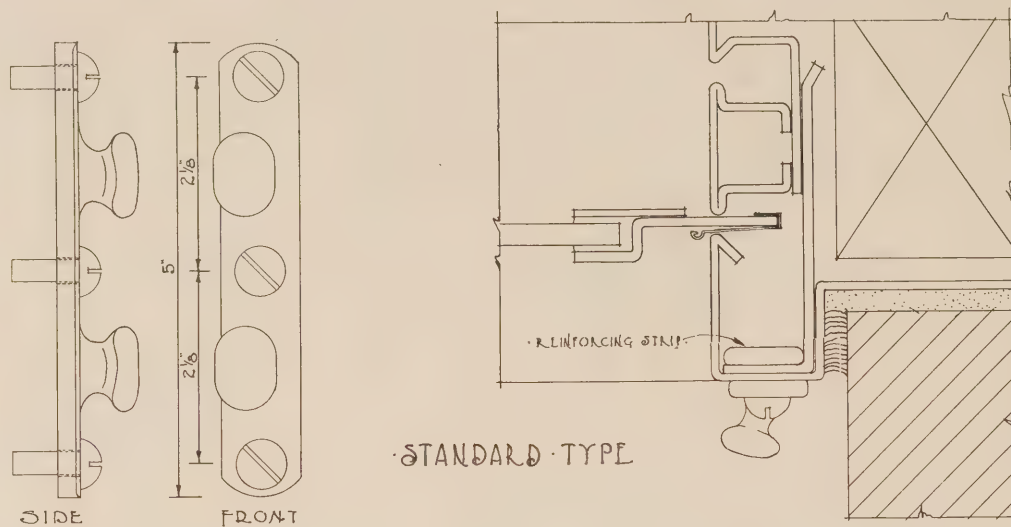
DETAILS SCALE 3"=1'-0"

TRUSCON
STEEL WINDOWS

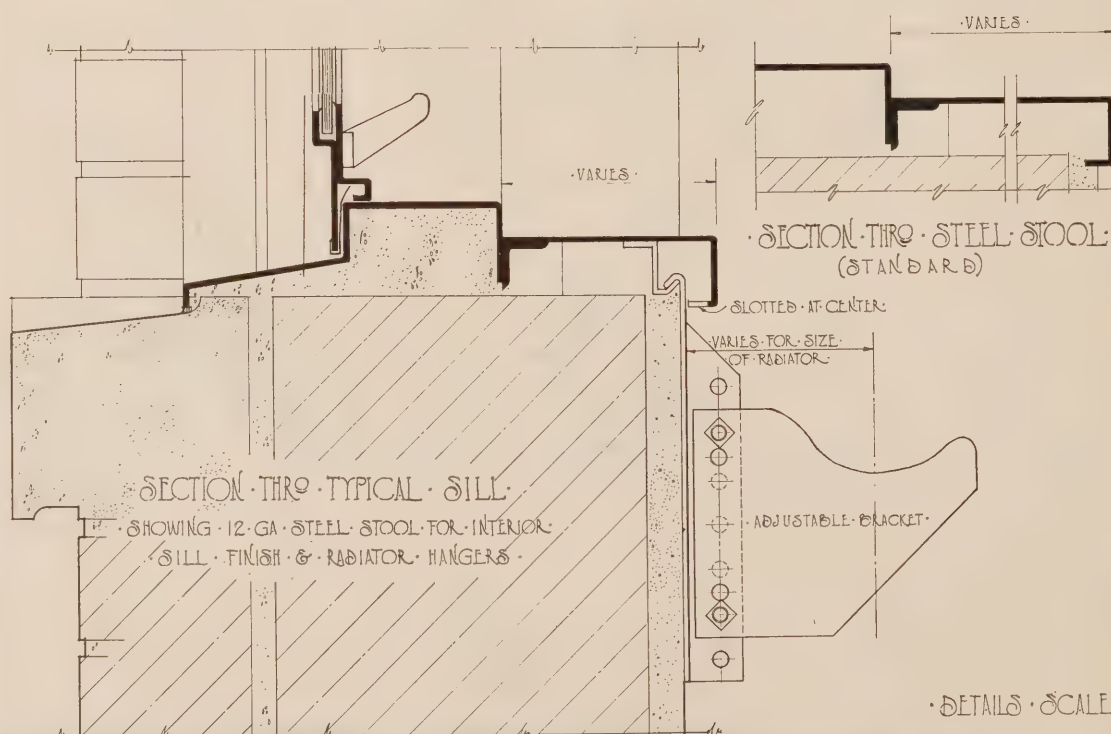
STANDARD DETAILS
TRUSCON DOUBLE HUNG WINDOW
TRUSCON STEEL COMPANY MODEL NO. 28 YOUNGSTOWN, OHIO

W-4
APRIL 1929

Specifications on page 113



· SECTION · THRU · JAMBS · SHOWING · WINDOW · CLEANING · BOLTS ·

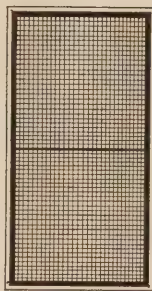


TRUSCON
STEEL WINDOWS

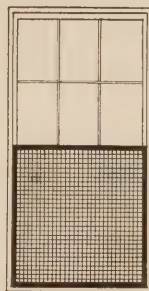
· SPECIAL · FEATURES ·
TRUSCON DOUBLE HUNG WINDOW
TRUSCON STEEL COMPANY · MODEL · NO. 28 · YOUNGSTOWN OHIO

W-5
APRIL ~ 1929 ·

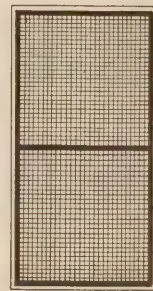
Specifications on page 113



· ELEVATION OF ·
· TOP · HINGED · SCREEN ·

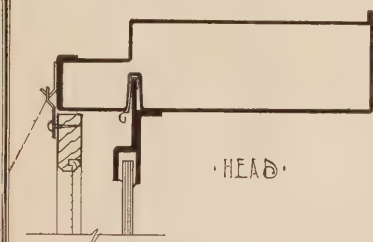


· ELEVATION OF ·
· HALF · SLIDING · SCREEN ·

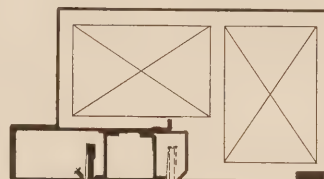


· ELEVATION OF · VERTICAL ·
· DOUBLE · SLIDING · SCREEN ·

· SCREENS · NOT · FURNISHED · BY · T · S · CO ·

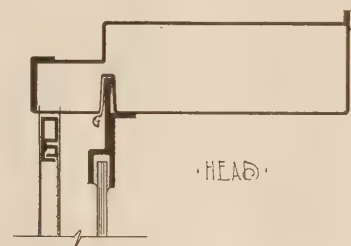


· HEAD ·

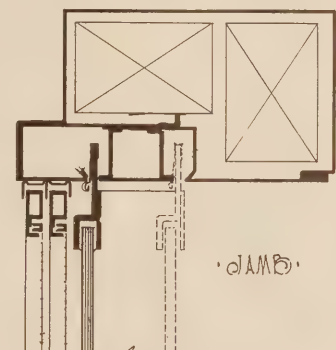


· JAMB ·

· MEETING ·
· RAIL ·



· HEAD ·



· JAMB ·

· SILL ·

· SECTION OF ·
· TOP · HINGED · SCREEN ·
(WOOD)

· SECTION OF ·
· HALF · SLIDING · SCREEN ·
(STEEL)

· SECTION OF ·
· DOUBLE · SLIDING · SCREEN ·
(STEEL)

· SCREENS ·

TRUSCON
STEEL WINDOWS

TRUSCON DOUBLE HUNG WINDOW

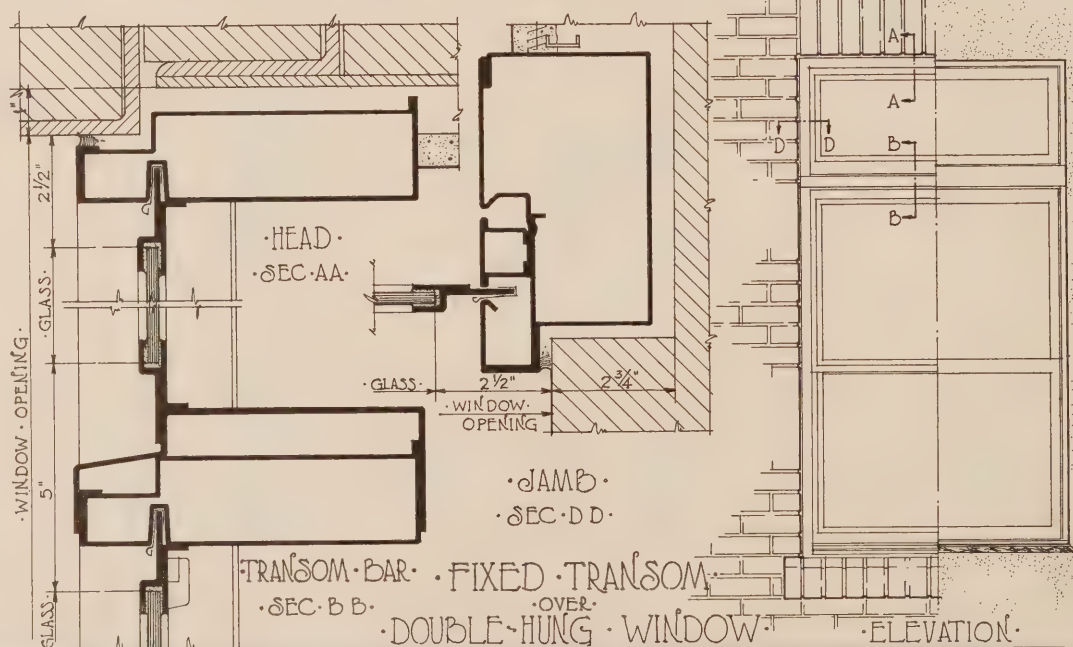
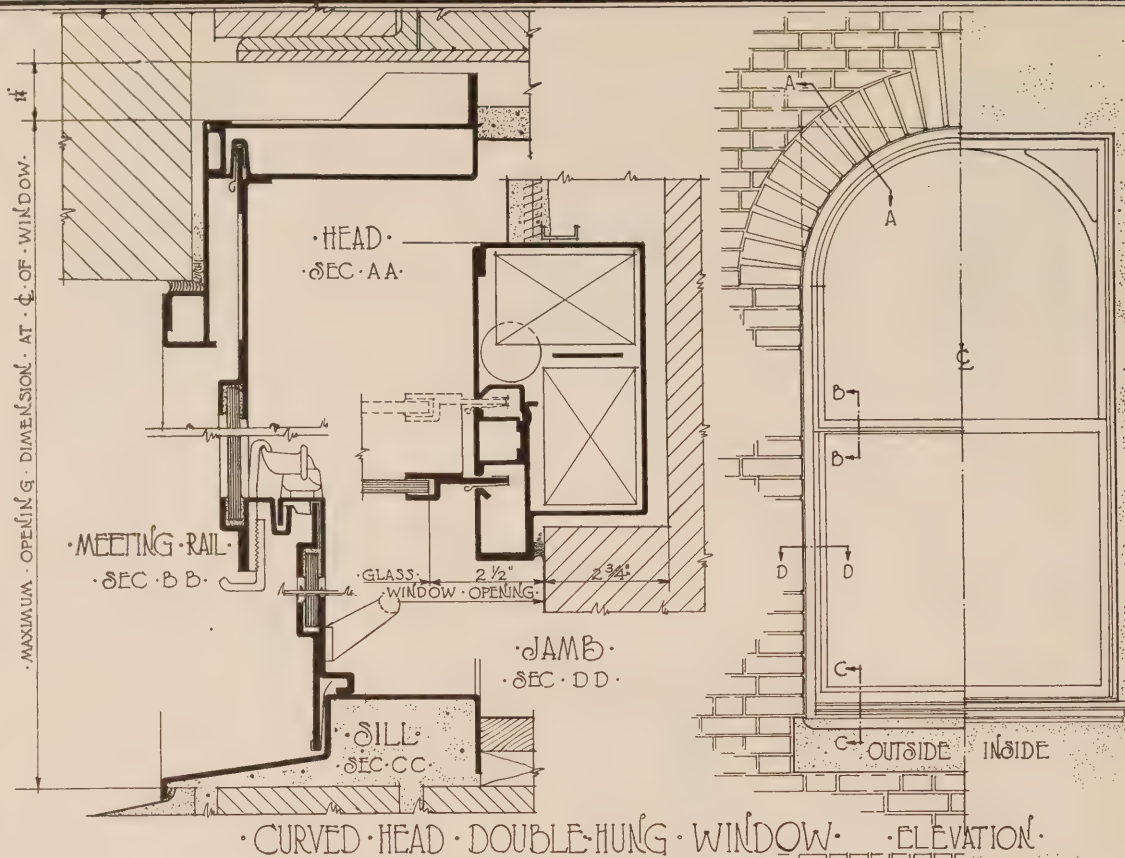
TRUSCON STEEL COMPANY · MODEL · NO · 28 ·

YOUNGSTOWN OHIO ·

W-6

APRIL · 1929

Specifications on page 113

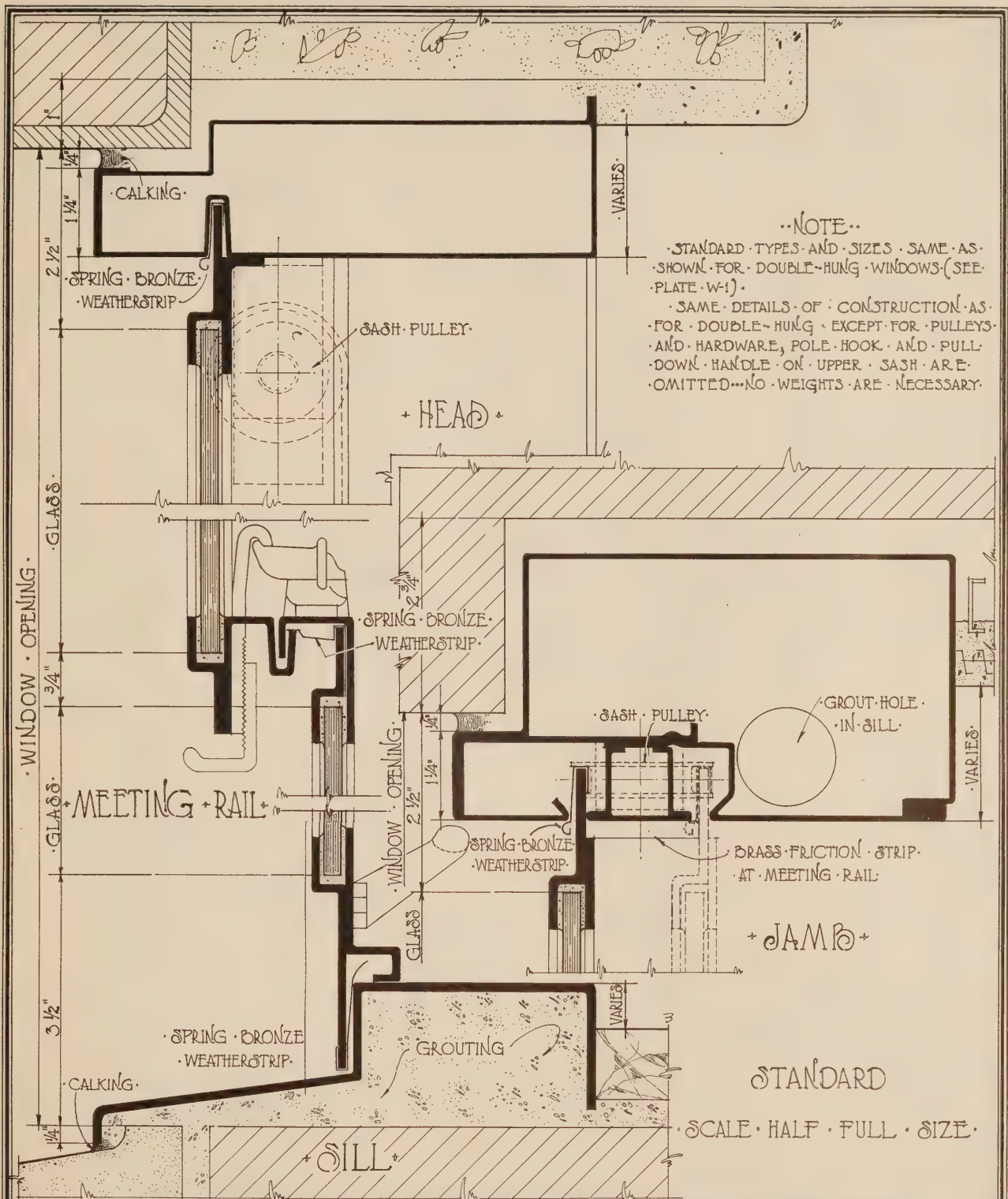


TRUSCON
STEEL WINDOWS

SPECIAL FEATURES
TRUSCON DOUBLE-HUNG WINDOW
TRUSCON STEEL COMPANY MODEL 110-28 YOUNGSTOWN OHIO

W-7
APRIL 1929

Specifications on page 113



..NOTE..

STANDARD TYPES AND SIZES SAME AS SHOWN FOR DOUBLE-HUNG WINDOWS (SEE PLATE W-1).

· SAME · DETAILS · OF · CONSTRUCTION · AS ·
· FOR · DOUBLE · HUNG · EXCEPT · FOR · PULLEYS ·
· AND · HARDWARE, POLE · HOOK · AND · PULL ·
· DOWN · HANDLE · ON · UPPER · SASH · ARE ·
· OMITTED...NO · WEIGHTS · ARE · NECESSARY ·

STANDARD

· SCALE · HALF · FULL · SIZE ·

TRUSCON
STEEL WINDOWS

TRUSCON - COUNTERBALANCED - WINDOWS

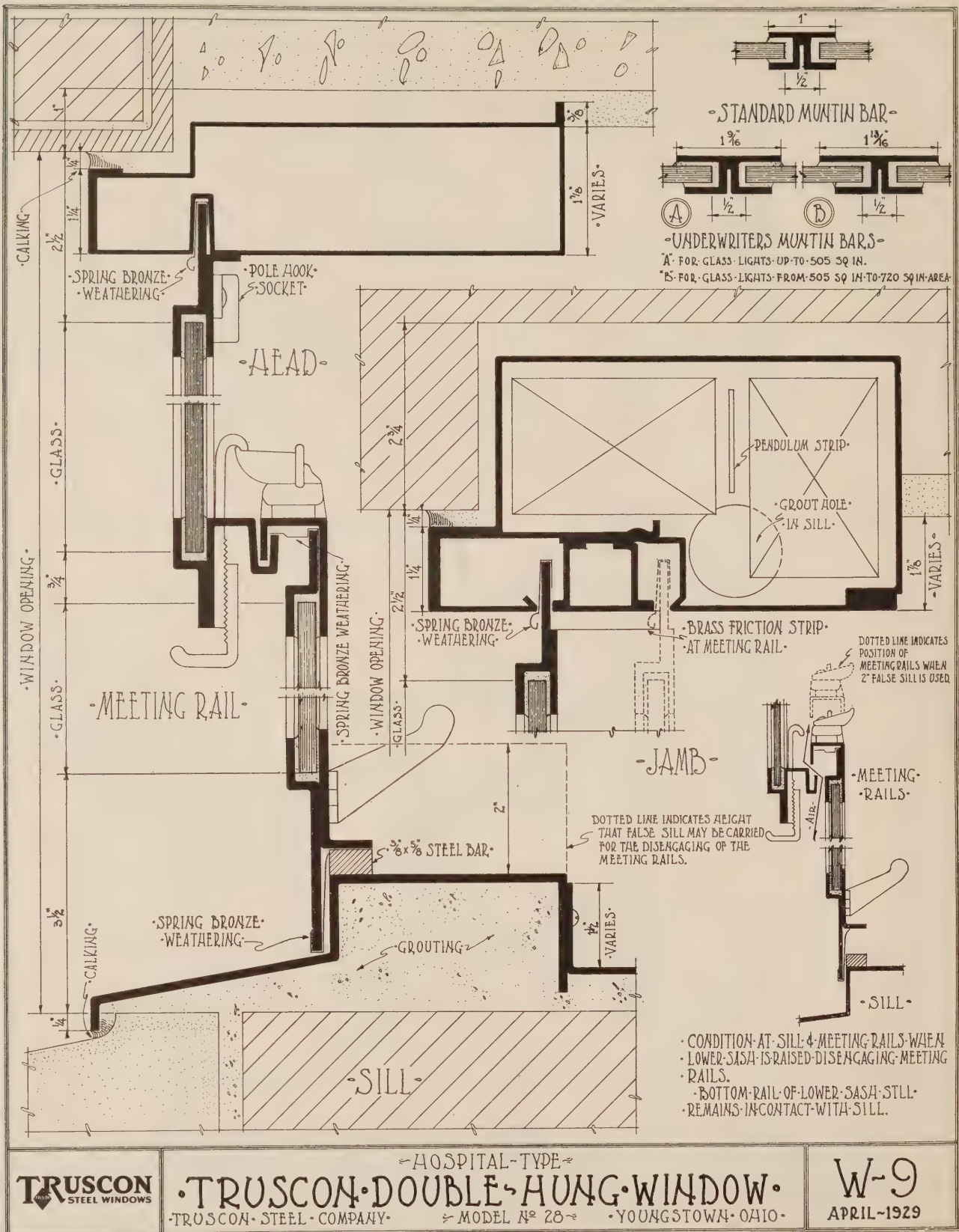
TRUSCON STEEL COMPANY.

-PLATE-TYPE-

• YOUNGSTOWN • OHIO •

W-8

APRIL ~ 1929



TRUSCON DOUBLE-HUNG STEEL WINDOWS

MODEL No. 28

UNDERWRITERS' LABELED

All Truscon Double-Hung Steel Windows Model No. 28 constructed to meet the Underwriter's requirements, must conform to all of the following restrictions and limits as to opening size, glass size, glazing and hardware:

No single window shall exceed 6'-0" wide or 10'-0" high.

Underwriter's approval may be secured on regular square headed window which has curved or cambered staff bead and steel plate applied to exterior of window to form Architectural lines desired.

Glass Lights limited to 720 square inches.

Glass— $\frac{1}{4}$ " wire.

Muntin Bars— $1\frac{3}{4}$ " wide.

Hardware—Malleable sherardized, using one sash lock, E-342-A, and strike E-325-B.

TRUSCON STEEL WINDOWS

HORIZONTALLY PIVOTED VENTILATORS

UNDERWRITERS' LABELED

SPECIFICATIONS

General

- 1 All horizontally pivoted windows indicated on plans and elevations and called for in these specifications as "Underwriters" shall be of type as manufactured by the Truscon Steel Company of Youngstown, Ohio, especially equipped and restricted in size and glass area so as to meet the requirements of the Underwriters' Laboratories, Inc. No substitutions shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification hot-rolled billet steel.

Construction

- 3 All joints shall be mortise and tenon and air-hammer riveted.
- 4 The intersection of horizontal and vertical muntins shall have a dovetail mitre rigidly interlocking the bars.
- 5 No excess metal or projecting surfaces will be permitted where muntin bars intersect.
- 6 Muntin bars, except where ventilators occur, are to be continuous from head to sill and from jamb to jamb.
- 7 The members of the windows shall not be bent or deformed during process of manufacture.
- 8 Double contact weathering shall be provided on all four sides of the ventilators.
- 9 Unless otherwise specified, the ventilators shall be horizontally pivoted 2" above the center line.
- 10 The butts shall be solid steel securely riveted to the ventilator and side bar of windows and equipped with $\frac{3}{8}$ " steel removable pins held in place with washer and cotter pins.
- 11 Top and bottom rails of ventilators shall be cambered in shop before being fitted so that when closed, the corners shall engage first, allowing the ventilator to be evenly drawn up to a weather-tight bearing with cam locking device.

Size of Unit

- 12 No unit shall exceed 7'-0"x12'-0" in size, either dimension being considered the height or width. Single units may be combined in openings of any width by means of T-Bar mullions as manufactured by the Truscon Steel Company.
- 13 The height of any given window opening shall not exceed 12'-0".

Mullions

- 14 Where two or more units up to and including 10'-9 $\frac{1}{2}$ " high are used in the same opening they shall be connected with Truscon Standard T-Bar Mullions (Type T-2).
- 15 For all openings over 10'-9 $\frac{1}{2}$ " in height double T-Bar Mullions (Type T-3) shall be used.

- 16 All mullions shall be 2 $\frac{3}{4}$ " wide (2" mullion distance) with slotted holes to allow for adjustment.

- 17 Mullions shall extend 3" below the leg of window at sill to provide a firm anchorage in sill construction.

Ventilators

- 18 Ventilators may abut at the head, sill or jamb of window units. Two ventilators may be placed adjacent in the same unit; however, no single ventilator shall exceed 3,000 square inches in area.
- 19 Ventilators must be operated separately by means of a push bar or with a gravity cam latch and chain, the chain being provided with a fusible link.
- 20 Only one ventilator in each window unit may be operated with a push bar.
- 21 The ventilators shall be equipped with Truscon Steel Company's standard expansion clips.

Structural Support

- 22 All structural work for the support of steel windows shall be provided by other contractors.

Painting

- 23 All window units shall be given a dip coat of protective paint before shipment.
(For paint specifications see plate S-1 page 134.)

Glass Sizes

- 24 Single lights shall be limited to a width of 14" and a height of 20" but the exposed area of the glass in each light shall not exceed a total of 280 square inches.

Glazing

- 25 All windows shall be inside glazed. Windows shall be glazed with a wire glass not less than $\frac{1}{4}$ " in thickness.
- 26 Lights shall be held in place with putty and $\frac{1}{16}$ "x $\frac{1}{16}$ " steel glazing angles on all sides of each light.
(For putty specifications see plate S-1 page 134.)

Underwriters' Inspection and Approval

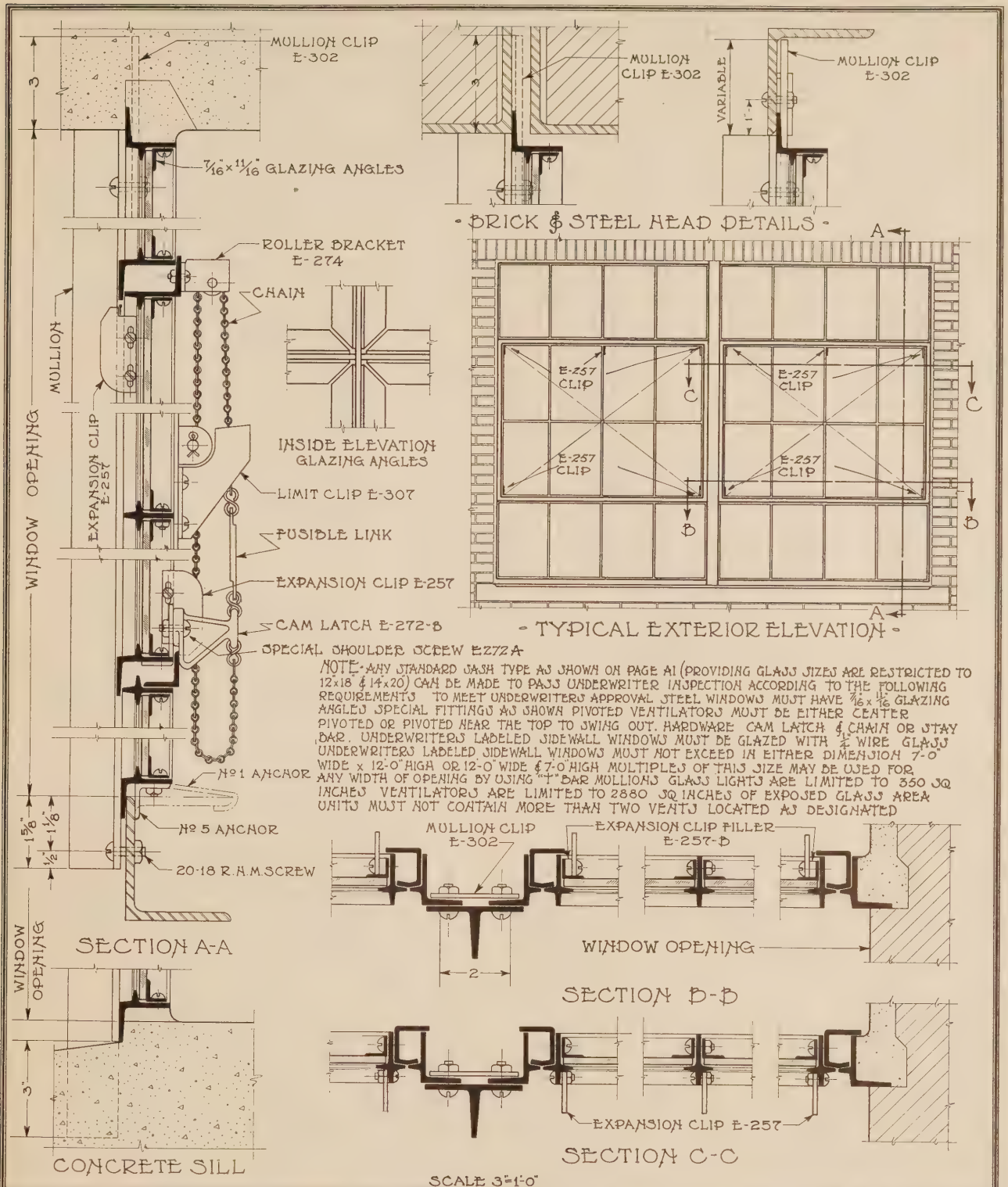
- 27 All window units shall be inspected by the representative of the Underwriters' Laboratories before shipment and their label attached to the window in a conspicuous place.

Erection

- 28 Window units must be trued in all directions and set plumb in the opening before glazing.
- 29 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.
- 30 The erection of windows shall be handled by the manufacturer of same.
- 31 After windows have been set in opening and properly built in, the joint between the frame and masonry shall be carefully pointed up by the mason contractor.

**These Specifications cover
Drafting Room Standard**

L-1 (page 125)



TRUSCON
STEEL WINDOWS

• PIVOTED • VENTILATOR • TYPES •
UNDERWRITERS LABELED WINDOWS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

L-1
APRIL - 1929

TRUSCON PROJECTED STEEL WINDOWS

COMMERCIAL TYPE UNDERWRITERS' LABELED

SPECIFICATIONS

General

- 1 All projected commercial type windows indicated on plans and elevations and called for in these specifications as "Underwriters" shall be of type as manufactured by the Truscon Steel Company of Youngstown, Ohio, especially equipped and restricted in size and glass area so as to meet the requirements of the Underwriter's Laboratories, Inc. No substitution shall be made without the written consent and approval of the architect.

Material

- 2 All members shall be constructed from Truscon specification hot-rolled billet steel.

Ventilators Projected Out

Construction

- 3 All ventilators must Project Out. All joints shall be mortise and tenon, and air hammer riveted.
- 4 The intersection of horizontal and vertical muntins shall have a dovetail mitre, rigidly interlocking the bars.
- 5 No excess metal or projecting surfaces shall be permitted where muntin bars intersect.
- 6 Muntin bars, except where ventilators occur, are to be continuous from head to sill and from jamb to jamb.
- 7 The members of the windows shall not be bent or deformed during process of manufacture.
- 8 Ventilators shall have double contact weathering on all four sides.
- 9 The sliding pivot shall be constructed of screw stock brass.
- 10 The side of the window or ventilator frame shall act as a guide for the sliding pivot, and shall be constructed without recess or slot in which dirt or ice may collect, to interfere with the free movement of the ventilator.
- 11 Uniform tension to hold ventilator solidly in any desired position shall be realized by inserting a coil spring between the shoulder on the pivot and the hinge butt attached to the ventilator.
- 12 There shall be two heavy supporting arms attached to the ventilator and frame, designed to be concealed when ventilator is closed.
- 13 Ventilators Projected Out when opened shall have no part of the ventilator projecting inside the normal plane of the windows.

Size of Window Units

- 14 No unit shall exceed 7'-0" x 12'-0" in size, either dimension being considered the height or width. Single units may be combined in openings of any width by means of T-Bar mullions as manufactured by the Truscon Steel Company.

Mullions

- 15 The height of any given window opening shall not exceed 12'-0".
- 16 Where two or more units up to and including 10'-9½" high are used in the same opening they shall be connected together with Truscon Standard T-Bar Mullions (Type T-2).

- 17 For all window openings over 10'-9½", double T-Bar Mullion (Type T-3) shall be used.
- 18 All mullions shall be 2¾" wide (2" mullion distance) with slotted holes to allow for adjustment.
- 19 Mullions shall extend 3" below leg of window at sill to provide firm anchorage in sill construction.

Arrangement and Size of Ventilators

- 20 Ventilators may abut at the head, sill or jamb of window units. No single ventilator shall exceed 1,680 square inches in area. All ventilators must operate separately with a gravity cam latch.

Structural Support

- 21 All structural work for the support of steel windows shall be provided by another contractor.

Hardware

- 22 All hardware shall be malleable iron throughout.
- 23 All ventilators opening out, and within convenient reach, shall be equipped with a cam latch handle of standard Truscon design.
- 24 All ventilators opening out, and not easily accessible, shall be equipped with cam latch handle and pole hook ring.

Painting

- 25 All window units shall be given a shop coat of protective paint before shipment.
(For paint specifications see plate S-1 page 134)

Glass Sizes

- 26 Glass sizes of single lights shall be limited to a width of 14" and a height of 20" but the exposed area of the glass in each light shall never exceed a total of 280 square inches.

Glazing

- 27 All windows shall be inside glazed.
- 28 All windows shall be glazed with wire glass, not less than ¼" in thickness.
- 29 All lights shall be set in putty and held in place with 7/16" x 1 1/16" steel glazing angles on all sides.
(For putty specifications see plate S-1 page 134)

Underwriters' Inspection and Approval

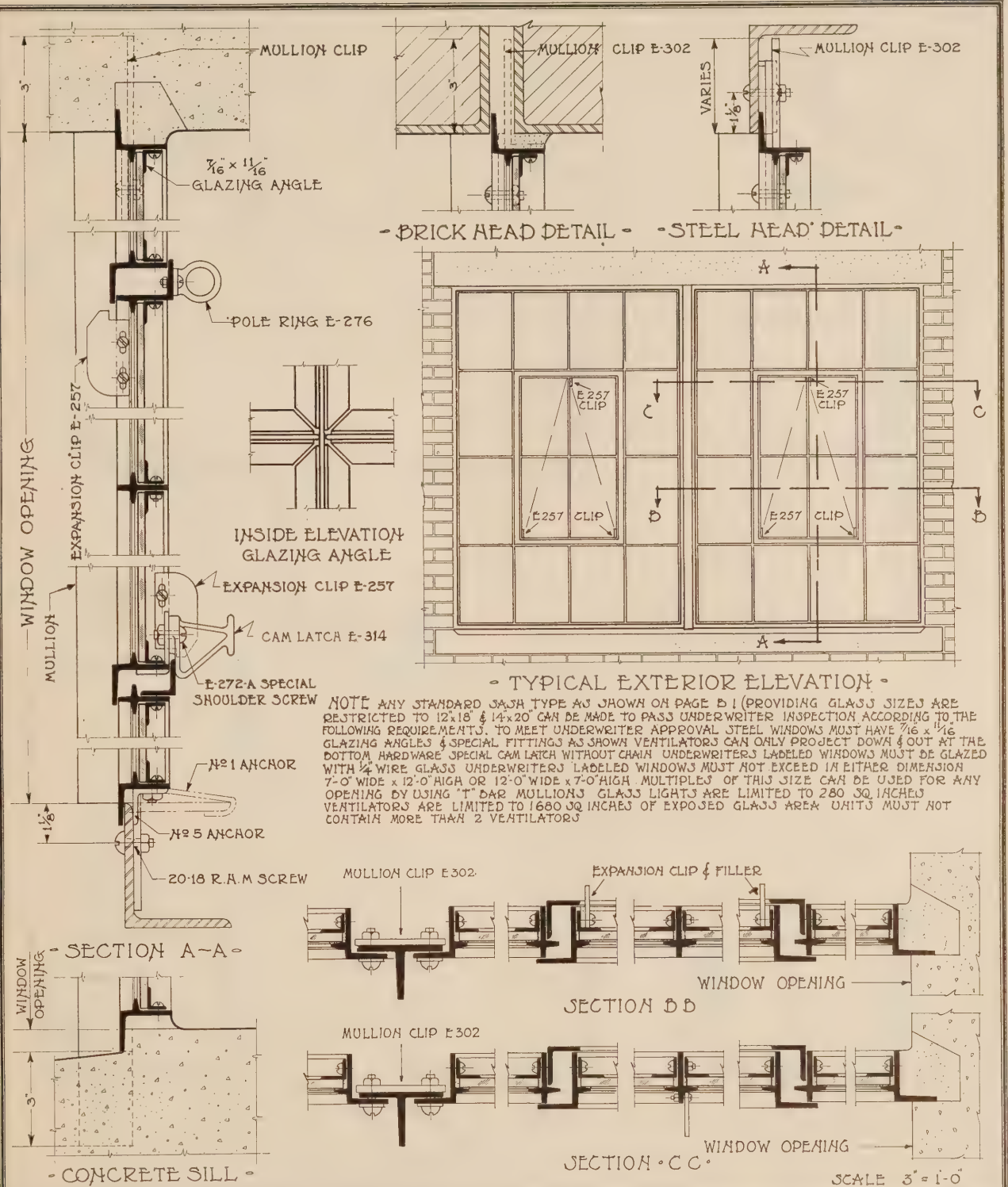
- 30 All window units shall be inspected by the representative of the Underwriters' Laboratories before shipment and their label attached to the window in a conspicuous place.

Erection

- 31 Window units must be trued in all directions and set plumb in the masonry before glazing.
- 32 In setting windows, wooden wedges to hold same in place must be located so as not to bulge or distort the unit.
- 33 The erection of windows shall be handled by the manufacturer of same.
- 34 After windows have been set in masonry and properly built in, the joint between the window frames and masonry shall be carefully pointed up by the mason contractor.

**These Specifications cover
Drafting Room Standard**

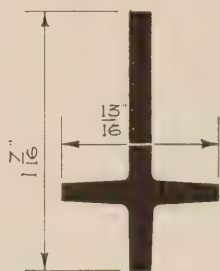
L-2 (page 127)



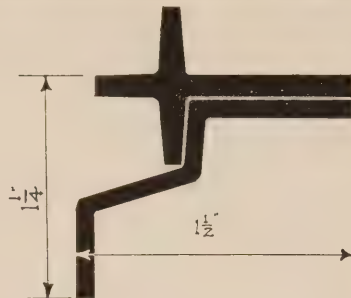
TRUSCON
STEEL WINDOWS

COMMERCIAL • PROJECTED • TYPES •
UNDERWRITERS LABELED WINDOWS
 TRUSCON STEEL COMPANY
 YOUNGSTOWN, OHIO

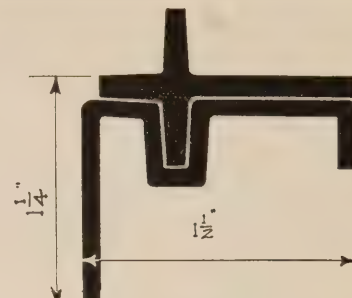
L-2
 JULY-1928



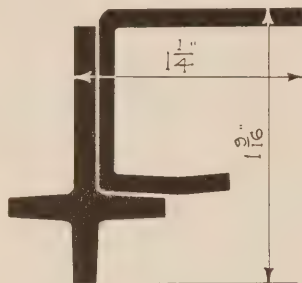
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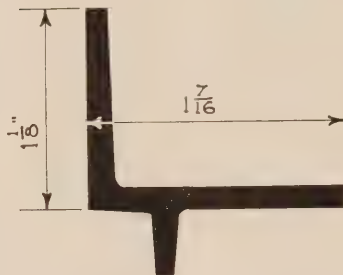
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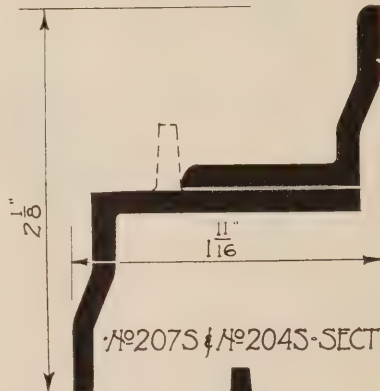
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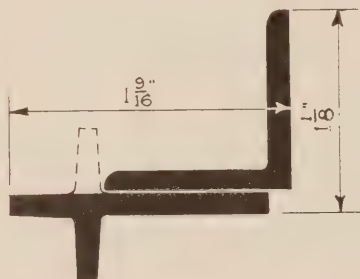
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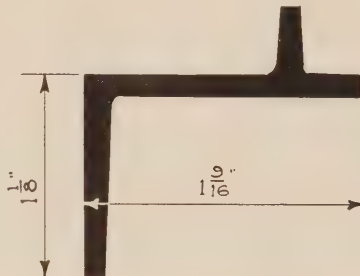
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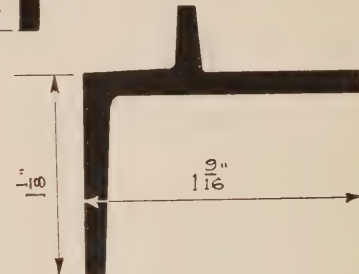
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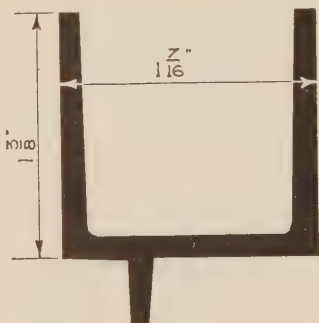
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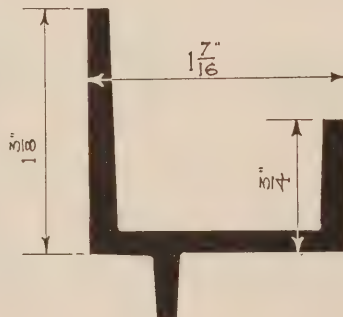
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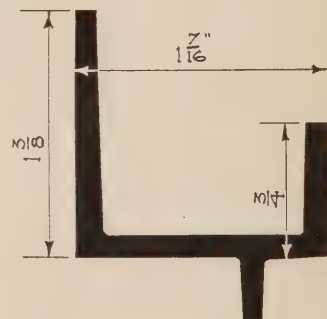
- No 209 - SECTION -



- No 210 - SECTION -



- No 210A - SECTION -



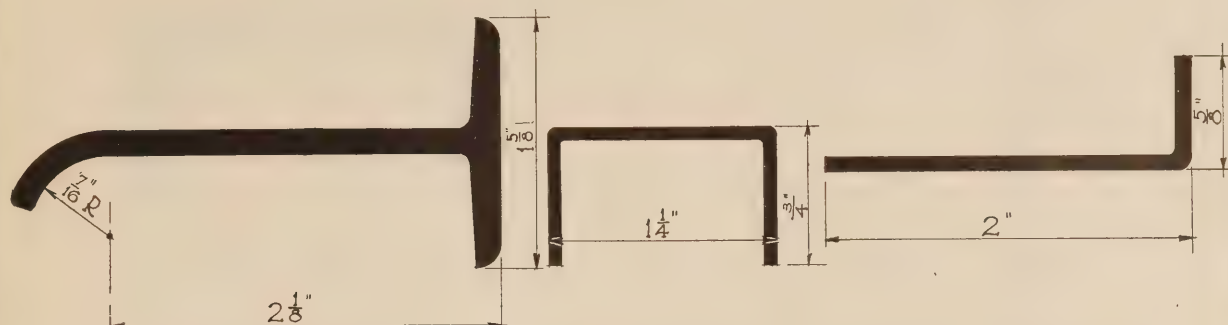
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- FULL SIZE -

TRUSCON
STEEL WINDOWS

STANDARD WINDOW SECTIONS
TRUSCON - STEEL - WINDOWS
 TRUSCON - STEEL - COMPANY
 YOUNGSTOWN - OHIO

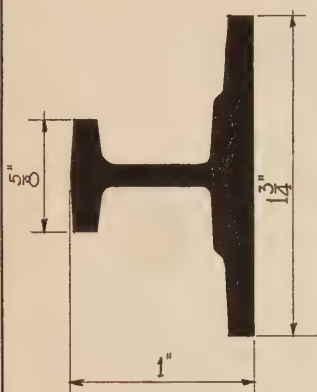
R-1
JULY-1928



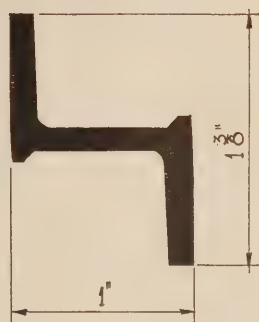
• NO 36 D • SECTION •

• NO 293 • SECTION •

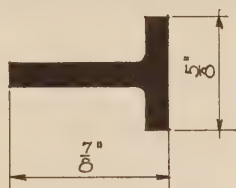
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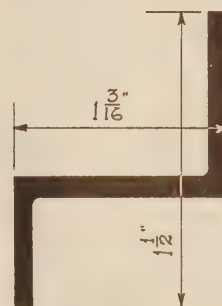
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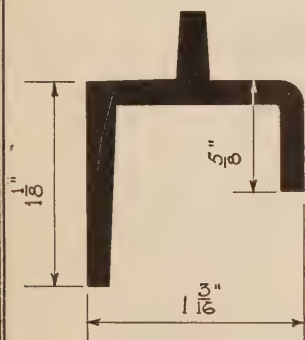
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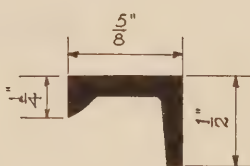
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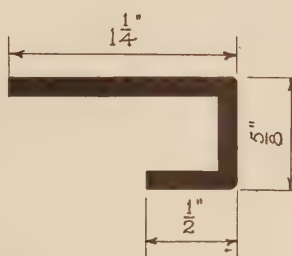
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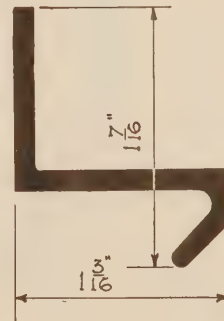
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• NO 254 • SECTION •



• NO 255 • SECTION •



• NO 247 • SECTION •

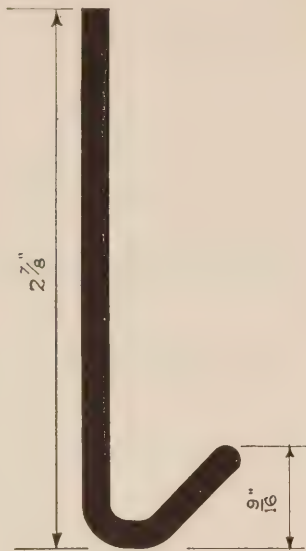
• FULL • SIZE •

TRUSCON
STANDARD
STEEL CASEMENTS

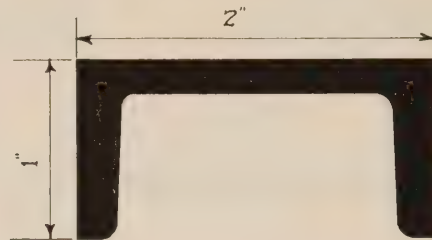
• BASEMENT & CASEMENT • SECTIONS •
• TRUSCON • STEEL • WINDOWS •
• TRUSCON • STEEL • COMPANY •

• YOUNGSTOWN • OHIO •

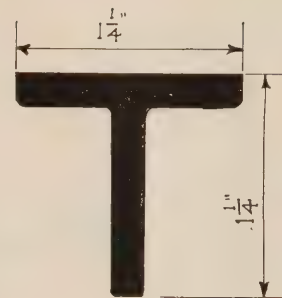
R-2
DEC-1928



· N° 27 · CONTINUOUS · HINGE ·



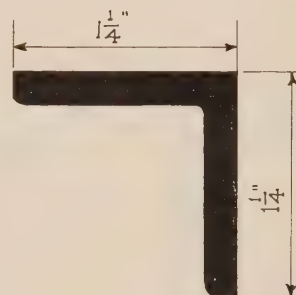
· N° 26 · TOP · RAIL ·



· N° 28 · VERTICAL · MUNTIN ·



· N° 39 · SILL · RAIL ·



· N° 29 · END · VERTICAL · RAIL ·

TRUSCON
STEEL WINDOWS

· FULL · SIZE · SECTIONS ·
· TRUSCON · CONTINUOUS · STEEL · WINDOWS ·
· TRUSCON · STEEL · COMPANY ·
· YOUNGSTOWN · OHIO ·

R-3
JULY-1928

TRUSCON ERECTION SERVICE

TRUSCON established a nation-wide erection service organization to assure the proper performance of window products. We have a key organization at our plant in Youngstown and a great number of district erection organizations, in charge of trained executives, in the principal centers all over the country.

The purpose of the Truscon Erection Service is to render to all our customers an efficient cooperation in their efforts to obtain maximum function of all Truscon Window Products at an economical cost.

The organization consists of engineers and skilled mechanics experienced in erection and the proper function and adjustment of Truscon Steel Windows and Doors.

TRUSCON PRESSED STEEL LINTELS

SPECIFICATIONS

General

- 1 All masonry openings, 7'-4" and under, shall be supported by pressed steel lintels as manufactured by the Truscon Steel Company of Youngstown, Ohio. No substitution shall be made without the consent and approval of the architect.

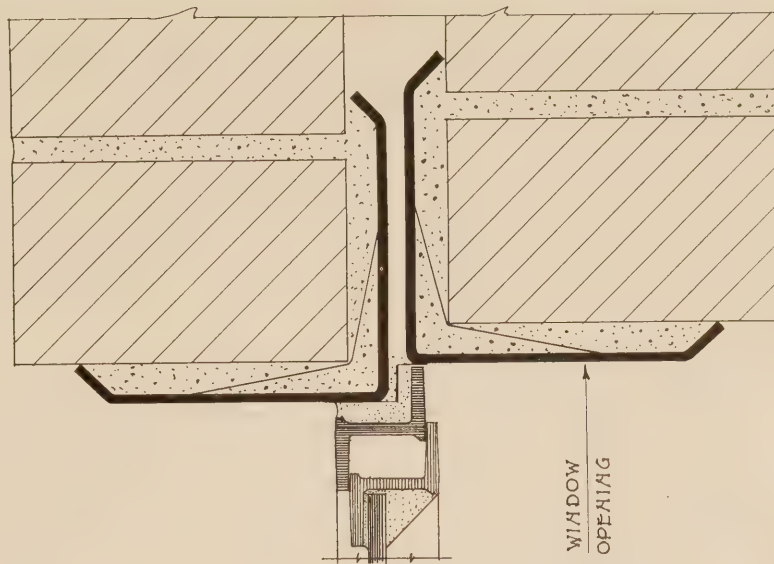
Material

- 2 All lintels shall be of No. 11 or No. 9 gauge United States Standard as required, and shall be manufactured from hot-rolled billet steel.
- 3 Lintels for spans up to and including 4'-4" to be 3½"

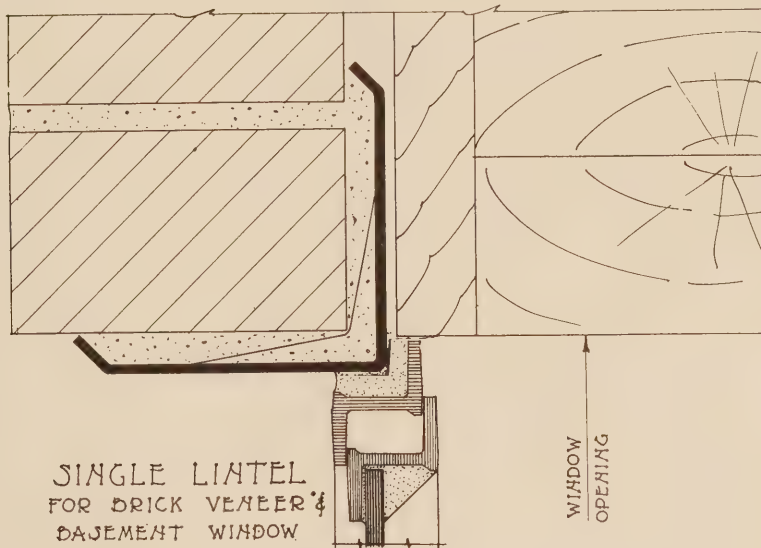
of No. 11 gauge stock, and from 4'-4" to 7'-4" are to be 4" x 4", of No. 9 gauge stock. Edges are to be turned up ⅜" to allow for good mortar bed.

- 4 Reinforcing ribs shall be pressed inward on each leg of the lintel on six inch centers.
- 5 Pressed Steel Lintels should not be used for openings where concentrated loads occur over the opening. Allow 4" minimum bearing at ends.
- 6 All lintels shall receive a dip coat of protective paint before shipment.

**These Specifications cover
Drafting Room Standard
N-1 (page 133)**



DOUBLE LINTEL
FOR SOLID MASONRY &
BASEMENT WINDOW



SINGLE LINTEL
FOR BRICK VENEER &
BASEMENT WINDOW

NOTES: SINGLE LINTELS ARE FURNISHED IN STANDARD LENGTHS OF 2'-6", 3'-0", 3'-6", 4'-0", 4'-6", 5'-0", & 5'-6", 6'-0", 6'-6", 7'-0", 7'-6" & 8'-0". DOUBLE LINTELS ARE DESIGNED TO CARRY SIMPLE LOADS OF BRICK OR MASONRY. THIS LINTEL SHOULD NOT BE USED FOR CONCENTRATED LOADS WHEN GIRDER AND BEAM CENTERS OVER WINDOW OPENING. LINTELS TO HAVE 4" MINIMUM BEARING AT ENDS.

TRUSCON
STANDARD
PRESSED STEEL LINTELS

• TYPICAL • INSTALLATION • DETAILS •
TRUSCON PRESSED STEEL LINTELS
TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

N-1
DEC. 1928

SHOP AND FIELD PAINTING

SPECIFICATIONS

General

- 1 All steel windows and steel doors, unless otherwise specified, shall receive one shop coat of Truscon red oxide protective coating, and two field coats of Truscon Bar-Ox inhibitive coating, as manufactured and recommended by The Truscon Laboratories, Detroit, Mich.

Condition of Surface

- 2 All steel surfaces shall be thoroughly cleaned, free from mill scale, rust, grease or foreign matter of any kind.

Cautions

- 3 No painting shall be done in wet weather, and no paint shall be applied to a wet or damp surface.
- 4 No thinner shall be used in the paint without the written approval of the architect or engineer.

Shop Painting

- 5 All steel windows shall receive one dip coat of Truscon red oxide protective coating before shipment.
- 6 All steel doors shall receive one brush coat of Truscon red oxide protective coating before shipment.
- 7 All paint shall be allowed sufficient time to dry before shipment.

Field Painting

- 8 After erection and before glazing all steel windows and steel doors shall receive two thorough brush coats of Truscon Bar-Ox inhibitive coating. (Color to be selected.)
- 9 All materials shall be delivered to the building in the manufacturer's original packages, with labels intact and seals unbroken.

METAL WINDOW PUTTY

SPECIFICATIONS

General

- 1 All putty used for setting of glass in steel windows shall be special metal window putty, as manufactured by The Truscon Laboratories, Detroit, Michigan.

Material

- 2 Putty shall be manufactured from imported English chalk cliff whiting, compounded with waterproof oils.

Consistency

- 3 All putty must be elastic so that it may be "drawn out" without breaking and readily adhere to steel and glass.
- 4 All putty must be adhesive, securely cementing itself to glass and steel, resulting in a water tight joint.

Application

- 5 All putty shall dry hard and firm without shrinking, checking or becoming brittle.
- 6 If putty is too stiff to work, water proof oil shall be used to bring it to proper consistency. Under no

circumstances shall glazers use gasoline or other driers to soften putty.

- 7 A uniform layer of putty shall be spread on the sash glazing rabbet. The glass shall be pressed into place so that putty forms a uniform water tight bearing on all sides.
- 8 Glass lights shall be held in place by means of Truscon copper clad steel wire glazing clips.
- 9 Each light shall be face puttied to a sufficient depth to cover glazing clips and finished off in a smooth, neat and workmanlike manner.
- 10 All excess putty shall be cleaned off inside and outside of windows when work is completed.

Shipment

- 11 All metal window putty shall be delivered to the job in the manufacturer's original packages with labels intact and seals unbroken.

(Truscon Metal Window Putty is furnished in red unless otherwise specified. Other colors will be furnished at additional cost on special orders only.)

Special attention should be given to the use of Truscon Casement Window Putty for glazing steel casements and Truscon Monitor Window Putty for glazing installations of monitor windows.

The general specification for the use of these two products is substantially as given above, but it is important to specify and use the special formulation of putty for steel casement windows and monitor window requirements.

TRUSCON BAR-OX INHIBITIVE STEEL PAINT

Manufactured and recommended by The Truscon Laboratories, Detroit, Michigan

For many years, ordinary linseed oil paints were thought to be just as good protective coatings for steel as over wood. That this is not true is proved by the longer paint life and better protection obtained through the use of a new class of paints containing waterproof oils.

Bar-Ox Inhibitive Steel paint is strictly a waterproof oil paint. By that we mean that it dries with a film that does not permit the penetration of moisture.

A Bar-Ox film is entirely different from a linseed oil film. A linseed oil film contains millions of microscopic pinholes. The foots and impurities in linseed oil leave these pinholes in the hardened film, and moisture gets in through them.

Bar-Ox is so highly efficient a paint coating, especially with respect to protecting iron and steel from the ravages of water, that it has proved itself to be the only material able to survive under the extremely harsh requirements of the tropics.

The waterproof character of Bar-Ox Inhibitive Steel Paint, however, is only one of its features. It is a rust-inhibitive paint—that is, the pigments have been so selected as to use only those which inhibit corrosion. Pigments which stimulate corrosion, such as graphite, ochre, lampblack and the like, should never be used in a steel paint. In Bar-Ox, chromates and pigments which are rust inhibitive are used.

TRUSCON METAL WINDOW PUTTY

Manufactured and recommended by The Truscon Laboratories, Detroit, Michigan

A putty to be of any use must grip and hold the sash to the surface. Putty used on wood windows has plenty of opportunity to grip to the wood because of the soft, porous nature of the wood. But when the same putty is used on metal windows, one is confronted with an entirely different problem. The putty must adhere to hard, non-absorbent, non-porous steel.

Ordinary putty has always been used for glazing wood windows. When steel windows first came into production, it was not thought necessary to produce a special putty for the steel. The same putty used on the wood was used on the steel—with poor results.

When steel windows first came on the market, The Truscon Laboratories observed this and immediately set to work perfecting a special putty for steel windows. The old type of linseed oil putty was not satisfactory.

In Truscon Metal Window Putty, the Truscon Laboratories produced a super putty. It is really a glazing cement. It cements itself to

the steel and to the glass, thereby becoming inseparably attached, and forming an air-tight, water-tight joint.

Truscon Metal Window Putty becomes very hard, and yet it never cracks. It has that elasticity which permits it to adjust itself to the contraction and expansion of iron and steel. After years of service, Truscon Metal Window Putty still holds the glass and steel in a firm grip.

Truscon Metal Window Putty is easy to glaze. It is elastic. It dries hard and firm. It is shipped in steel drums which do not absorb any of the oil—hence the putty comes to the user as fresh as it is in the factory. Over sixteen million pounds of Truscon Metal Window Putty have been used for glazing some of the largest buildings of every type in the country.

It is usually estimated that one-half pound of Truscon Metal Window Putty is required per square foot of metal windows with the various openings of the usual average size.

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HANDBOOK

FOR STEEL WINDOWS AND STEEL DOORS

SIXTH EDITION
OF DRAFTING ROOM
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1929

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